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BALTIMORE, JANUARY 4, 1906.

Mr. F. M. Dobson of Wagener & Dobson, contractors and builders, Montgomery, Ala., writes to the MANUFACTURERS' RECORD as follows:

I have been taking the MANUFACTURERS' RECORD for the past 12 years, and regard it as the most valuable of its kind for the South published in the United States.

PROSPEROUS ENGLISH MILLS.

Nearly all connected with the cotton-spinning industry can congratulate themselves upon having experienced the most profitable year on record.

Such is the opening sentence of an editorial review of cotton spinning in 1905 by the *Financial Times* of London, and in connection with this prosperity of the English cotton mills, despite the pessimistic cry that is constantly being reiterated against high prices of cotton, it is interesting to note in the *Textile Mercury* of Manchester a list of the new cotton mills built in that district during the year. Recent correspondence of the MANUFACTURERS' RECORD from Manchester puts the total number of new spindles to be added to the Manchester district at 4,800,000. The list of mills given in detail in the *Mercury* shows 4,955,000 spindles, of which 2,200,000 spindles in 27 mills will run on American cotton and 30 with 2,755,000 spindles on Egyptian cotton. The majority of these mills have about 100,000 spindles each, the smallest in the list having 40,000 and the largest 130,000. Here is a total of 57 new mills with practically 5,000,000 spindles added to the Manchester district within the last 12 months, which is more than one-half as many spindles as the entire South at present has. Of 90 companies whose balance-sheets are reviewed by the *Financial Times*, the average dividend for the past year was 7 per cent., which was the largest since 1901 and 1900, in which the average was 7½ and 7¼ per cent. respectively.

THE SOUTH'S PART IN WORLD PROGRESS.

On other pages of this week's issue of the MANUFACTURERS' RECORD are published a number of articles from the pens of authorities in their respective fields bearing upon the part that the South has played in the economic progress of the world during the past year and clearly indicating the greater achievements still before it. Among the special articles are the following:

"World Survey of Iron and Steel," by J. Stephen Jeans, secretary of the British Iron Trade Association.

"Making Petroleum Records in Gulf-Coast Fields," by Holland S. Reavis of Texas.

"A New and Wonderful Ore Discovery in Alabama," by Thomas P. Grasty.

"South's Part in the World's Coal Production," by Frederick E. Seward of New York.

"The Future in the Appalachian South," by Albert Phenis.

"The Iron Industry in 1905-1906," by Edward H. Sanborn of Philadelphia.

"Cotton vs. World's Gold and Silver Output."

"What Railroads Are Doing."

"The Southern Cotton Association," by President Harvie Jordan of Atlanta, Ga.

"Broad Basis for Southern Self-Reliance," by Gen. M. C. Butler, former United States Senator from South Carolina.

"The Economic Future of the Negro," by Alfred Holt Stone of Mississippi.

"The South: What of Its Future?" by Col. J. B. Killebrew of Nashville, Tenn.

"Alabama's Iron and Steel Potentialities," by Thomas P. Grasty.

"Industrial Power in Piedmont Carolinas," by John Wood of Rock Hill, S. C.

"Southern Growth as Noted by a Close Observer," by I. S. Field.

"A Year in Southern Agriculture."

"For Honest Work by the South," by Wm. G. Cochrane of Alabama.

These articles as a whole present a striking picture of progress and prosperity in the South, setting forth at the same time a broad view of the substantial basis for more notable progress. They constitute the dominant portion of the reading matter of this week's issue of the MANUFACTURERS' RECORD, which, if set in the conventional type of the average book, would make a volume of about 200 pages.

STEADY!

Pennsylvania bringing nearly all of its iron ore 1000 to 1500 miles, its annual output being only about 600,000 tons, produces about four times as much pig-iron as the entire South and many times as much steel. Based largely on its coal, iron and steel interests, it has about \$300,000,000 more capital invested in manufacturing than the 14 States of the South. Massachusetts, but a tiny bit of a State 8000 square miles in area, less than one-seventh the size of Georgia alone, buying all of its raw material elsewhere, has one-half as much capital in manufacturing as the whole South. Boston has more capital invested in industrial interests within the city limits than Alabama and Georgia combined. These facts give us but a hint of what is in store for the South. This section will continue from now on to hold the center of the stage of the world's industrial activity until it surpasses Massachusetts and other States in proportion as its advantages exceed their lack of advantages. Our iron and steel industry will grow until we quadruple our present pig-iron output and turn all of it into finished product, until the comparatively few millions now invested shall have been increased to many hundreds of millions—possibly to billions. Our \$225,000,000 cotton-mill capital will double and quadruple and our varied industrial and mining interests will all keep full pace with coal and iron and steel and cotton.

Dazzling beyond our ability to fully grasp is the future of the South. The rate of growth will make us step as lively as the rush on Broadway when New York is in its most rapid gait if we would keep pace with its advance and not be left behind. The danger now is not that the South will not grow fast enough, but that exhilarated, intoxicated by the outpouring of wealth, by the sudden change from comparative poverty to abundant prosperity, we may go too fast. There is danger of sound and solid business conditions being changed by this mighty movement to wild speculation. We may be cut loose from the old moorings and launched out upon a sea of trouble unless we hold steady now. It is hardly necessary to preach action; hardly necessary to seek to arouse the South to its opportunities.

It may, however, be very necessary to sound a warning note not to go too rapidly. Don't rush headlong into every scheme; don't be caught by every fakir or fake enterprise with which the South will be overrun may well be suggested at the present moment. Look well into everything offered and avoid the pitfalls of speculation, whether speculation be in cotton, in town lots or in land. There is room for vast growth, a great increase in values of property, and the South may well give heed to the suggestion recently made in the MANUFACTURERS' RECORD that it no longer sell its mineral and timber lands for a mess of pottage, but hold steady and don't let wild

speculation take possession of the South. There is no need of it, for the inherent strength of the situation is such as to guarantee progress, which ought to satisfy the most vaulting ambition. Steady now!

Advertisements of Southern localities offering special advantages for the location of manufacturing enterprises will be found on pages 92, 93 and 94.

A WORLD VIEW OF IRON AND STEEL.

J. Stephen Jeans, secretary of the British Iron Trade Association, one of the foremost world authorities on iron and steel, in a comprehensive review, giving a world survey of the iron and steel industry in this issue of the MANUFACTURERS' RECORD, presents many facts of the greatest interest to every business man. His graphic review of the marvelous advance in iron and steel production, to which we have so often called attention, emphasizes the growing importance of America's position in this world-dominating industry. Possibly the most striking statement made in Mr. Jean's article is that, instead of the United States Steel Corporation having overcapitalized its ore property when it put a valuation of one dollar a ton on its 700,000,000 tons of ore, it had really not capitalized it at the full intrinsic value, and on this point he says:

On the contrary, I should be surprised if the directors of the Steel Corporation, in view of the fuller knowledge that they now possess as to the limited volume of iron ores at command in relation to the increased and increasing output of iron, would not place the value of the unworked ores at more than they did in 1901. In that year the total output of American iron ores was under 25,000,000 tons for an output of 15.8 million tons of pig-iron. Today the output of American iron ores is probably at the rate of over 40,000,000 tons a year, which is only 4,500,000 greater than the ascertained output of 1902, and it may be nearer 45,000,000 tons, which would be 16,000,000 tons over the output of 1901, the year preceding the formation of the Steel Trust.

This is a phase of the iron industry which is calculated to make all serious-minded people give close heed to the great problem now confronting the world as to where an available supply of ore can be found to meet the ever-increasing consumptive requirements. It has been estimated that there are known supplies of ores equal to the world's present rate of production for a hundred years, but, as Mr. Jeans points out, the world's iron output is likely to be doubled in the not very distant future. It is quite probable that, stored up somewhere ready for man's use at the appointed time, are sufficient supplies of ores to meet this condition, but it is also quite true that the world is coming to a realization of the supreme importance which the possession of vast bodies of ore and coal give to any country. It has been said that "that country or that section which can produce iron and steel at the lowest cost will dominate the trade and commerce of the world." If this be true, and cer-

tainly unless cotton is the most powerful factor in the world's business affairs, iron and steel hold that position, of what transcendent importance then is the fact that in addition to holding the monopoly of the world's cotton production the South today holds the largest supply of available iron ore known, with coal in quantity more than twice as great as the coal supply of Great Britain, Germany and Pennsylvania combined. The ownership of this vast supply of coal adds immensely to the strength of the South's iron situation, since it makes it possible to concentrate the raw materials for the production of iron and steel at lower cost than any other section of this or any other country, but that the vast mineral wealth of the South is not yet fully realized is strongly illustrated in the story published in this issue about what is now being called the gray-ore district of Alabama. The interesting portrayal of a vast iron-ore district, the development of which has been proceeding quietly for the last four or five years, in a district which seems destined to prove fully as important to the iron interests of the South as the rich ore region of Birmingham, may be taken as an example of how discoveries in other parts of the South of other vast stores of minerals of all kinds may be made. It is not only true that in the mineral development of the South we have as yet but scratched the surface; it is equally true that in the discovery of the resources of the South we have probably but barely scratched the surface, and other discoveries as great as that of gray ore, possibly of gold or copper or other things, may be found as surprising to the experts as was the finding of gray ore, when a few years ago actual demonstration proved the existence of what up to that time was absolutely unknown.

IN PASSING.

The card credited to the Pennsylvania Railroad Co. citing texts from the Bible in explanation of the latest anti-pass policy is a striking illustration of the ease with which one may get hold of the hot end of the poker in quoting Scripture. The card reads as follows:

The Scripture Versus Passes:
 "Thou shalt not pass."—Numbers xx, 18.
 "Suffered not a man to pass."—Judges iii, 28.
 "The wicked shall no more pass."—Nahum i, 15.
 "Though they roar, yet can they not pass."—Jer. v, 22.
 "He paid the fare and went."—Jonah i, 3.

Of the five texts, only one, it will be noted, bears upon the question of paying one's way when traveling. That one, "So he paid the fare thereof," as it should read, refers to the famous attempt of Jonah to flee unto Tarshish instead of going to Nineveh. It will be readily recalled what happened—how there was a mighty tempest in the sea, so that the ship bearing Jonah was like to be broken; how the waves were cast into the sea to lighten the vessel; how Jonah was awakened from his sleep and at his own suggestion, under the stress of a guilty conscience, was thrown overboard; how a great fish swallowed him and how he was in the belly of the fish three days and three nights before he was thrown out upon the land. Users of railroad passes have gotten into the habit of imagining that they were a kind of anti-Jonahs for the trains upon

which they traveled. Using a pass debarred them from recovering damages from the railroad company in case of injury, and they argued that their presence on a train was a fair guarantee against accident to the train. They had Jonah's payment of his fare to back such an argument. For he was the only one of his party mentioned specifically as having paid his fare, the presumption being, in the light of latter-day customs, that the owners of the wares were traveling free or at reduced rates. So, too, there was force for the argument in favor of passes in the fact that as soon as the fare-paying Jonah was cast overboard the tempest of the sea ceased and his fellow-travelers went on their way in safety. Another feature of that ancient incident has a timely suggestion. In a certain sense the radical treatment of Jonah may be regarded as a sort of throwing a tub to the whale. The anti-pass policy of the Pennsylvania Railroad, as announced, may be something of a tub to the whale, but its futility is perhaps indicated in the fact that even the great fish could not stomach Jonah longer than three days.

However that may be, and seriously speaking, the Pennsylvania's policy has brought forth a remarkable dispatch, as follows:

Pittsburg, December 27.—The Pennsylvania Railroad having ordered that all advertising be paid for in cash, and cut off all transportation to newspapers, the Pittsburg Newspaper Publishers' Association took action today. A resolution was passed to bar from the newspapers all complimentary notices relating to the Pennsylvania Railroad or its officers. All railroad wrecks are to be reported in detail, taking care that the railroads are not favored.

In the name of decent American journalism it is hoped that that dispatch is inaccurate or that the Pittsburg Newspaper Publishers' Association is not representative of the newspapers of Pennsylvania. If it be accurate it suggests a reflection upon American journalism that should be promptly resented by every reputable newspaper in the country. Whether or not the railroad companies of the country give passes, the American public may be assured that reputable newspapers will continue to publish as freely as ever the news about the railroads and to make their comments upon it without fear or favor. Any newspaper that regards its possession of a pass as a hamper upon its freedom of action or expression or any newspaper that takes the forfeiture of a pass as an excuse to deal unfairly with the railroads is not worthy of support of decent people.

MANHOOD VS. MONEY.

Elsewhere in this issue of the MANUFACTURERS' RECORD Mr. William G. Cochrane of Alabama makes a plea against pinchbeckism and for honesty in work. He appeals to men in business and in politics to put manhood before money in their estimates of things and would add condemnation of wrong to commendation of right in all affairs. In maintaining its ancient prestige in this particular the South may well keep such advice constantly before it. Material success is worse than failure if it is gained at the sacrifice of principle or through practices that cannot stand the white light of truth and honor. Accumulation of wealth is, after all, a poor satisfaction if it does not imply proper methods and proper application. In the rush of achievement young men of the South may be tempted to stray from the strait paths that alone lead to real success in life or may be blinded to the true guideposts. They cannot err

if they keep in mind a few general principles suggested by Mr. Cochrane's words and emphasized by their contraries expressed as follows:

The manufacturer who sells inferior goods for first-class stuff is a failure.

The artisan or mechanic who does not put his best into his task is a failure.

The employer who seeks to force his employe beyond the bargained limit is a failure.

The employe who "solders" or slovens is a failure.

The educational, social, ecclesiastical or political leader who plays upon the prejudices, the ignorance or the uncontrolled emotions of his followers, instead of appealing to their intelligence and to conviction founded upon knowledge and reason, is a failure.

Such men or women may win for themselves riches, place or fame, so called. They may be preferred above real worth and gentility by the superficial. But they are, nevertheless, failures, and no one knows that better than themselves.

Men and women who would really succeed, even if wealth and position be not their lot, must do honest work with results all wool and a yard wide.

THE TROLLEY'S FUTURE IN THE SOUTH.

It was no doubt expectations of trolley competition sooner or later which prompted the Pennsylvania Railroad Co. to decide upon the electrification of its West Jersey & Seashore division between Camden and Atlantic City, and the corporation has thus anticipated any efforts of possible rivals to gain a share of the large passenger traffic to and from one of the greatest seaside resorts in America, and perhaps, so far as popularity goes, in the world.

But the West Jersey & Seashore Railroad has been in the trolley business for some years, operating cars in Atlantic City and along the entire length of the island on which that city stands from the Inlet to Longport, besides another line across the marshes to the mainland, reaching various towns within easy distance of the sea. Yet it is the magnitude of the undertaking of an electric railway from Camden to Atlantic City which makes it remarkable, and the enterprise will be watched with interest by railway men as well as by the public.

The line to be electrified is the longer of the Pennsylvania's two routes from Philadelphia to Atlantic City, being 64 miles, but the run is to be made, according to announcement, in an hour and twenty minutes without stops. Through express time on the shorter road by steam is about one hour, so that the trolley will be equal in speed to the less important expresses on the steam road, but with the comfort of neither smoke nor cinders.

Almost simultaneously with the decision of the Pennsylvania to provide an electric line across New Jersey came announcements that both the Erie and the Lackawanna railroads would electrify many miles of their lines, the latter waiting only to observe the results of operating the New York Central's electric service for 35 miles out from New York city before entering upon the installation of electric motors on this road. The Central is preparing a costly and extensive electric equipment to handle its suburban service, but the success attending the use of electricity by the New York, New Haven & Hartford Railroad is ample assurance that it will also be successful on the Vanderbilt line. The Erie, however, is not waiting, but its declared purpose is to install

electric cars for local service as soon as possible, and the start is to be made between Binghamton and Corning, N. Y., a distance of 76 miles, where a third track will be laid for the trolley cars. This will connect at least 10 important towns.

What these companies are doing to hold their local passenger business by the installation of electric motor cars indicates what may be expected around important centers in the South before many years have passed. The rapid development environing such cities as Atlanta, Birmingham, Memphis, New Orleans and Galveston shows that fast and frequent local services must be maintained by the railroad companies at moderate rates of fare if they wish to remain masters of the suburban traffic as they are of through passenger business.

Already the Atlanta street railways have shot out an extension as far as Marietta, about 20 miles; another new company has a 30-mile electric plan under way, and at Birmingham the trolleys are extending by degrees farther and farther to nearby towns. The Memphis city lines are pushing out bit by bit into the suburbs and country; the electric lines at New Orleans are similarly enterprising and progressive, and at the neighboring city of Algiers a trolley road five miles long has just been financed and contract awarded to connect that place with several other points. In Texas the Houston & Galveston Interurban Railway plan has been revived, and now promises early fulfillment, although the Houston & Texas Central Railway has established a gasoline car service to provide a rapid and convenient means of travel between the two cities, which are little more than 50 miles apart. It must also not be forgotten that the Fort Worth & Dallas, the Augusta & Aiken and the Richmond & Petersburg electric railways have been successfully operated now for several years, and the Baltimore and Annapolis Electric Railway Co. is preparing to build this year its promised line from Baltimore to Washington, upon which considerable grading has already been done, and this notwithstanding that two steam roads furnish rapid service. Besides, there are other electric interurban lines, some in operation and many in prospect in the South.

This aggressiveness by existing electric railways and the activity of new companies which project other lines indicate clearly the conditions which the steam roads have to face if they desire to continue in undisputed dominance of local passenger traffic affairs around large centers, as well as in through business. Although there are few parts of the South where density of population exists to anything like the degree that it does in sections of the North and East where electric interurban lines are present or in prospect, there are certain districts which are gaining so rapidly in people that the railroads will very soon be compelled to decide whether they will continue to handle all the local passenger business by installing the frequent and convenient trolley car, or to let some of the traffic at least go to competitive electric railways. It can scarcely be doubted that the steam railroads will meet the situation just as it has been accepted by similar lines elsewhere. Whether electricity will be finally called upon to wholly displace steam power on the railroads is not ap-

parently assured, although its advocates predict that such will be the result, but it will undoubtedly be relied upon to move the bulk of business in and out of great terminal points, and that not only because of its cleanliness, but because its use will be economically desirable.

THE NEGRO MUST BESTIR HIMSELF.

A clear ray of light upon the economic feature of the negro was thrown by Mr. Alfred H. Stone of Mississippi in a paper read last week before the American Economic Association and published on other pages of this week's issue of the MANUFACTURERS' RECORD. Mr. Stone is a planter with a level head for the study of developments around him and with an admirable knack of succinctly stating the results of his observations. He has contributed quite a number of valuable papers to the discussion of the South's pressing labor problem. His latest is by no means the least valuable. In it he argues from practical experience that the great fault of the negro is not improvidence or shiftlessness, but unreliability, and he gives the friendly warning that unless that failing be corrected the negro cannot stand against the certain and increasing competition of white labor. Indicative of the end are facts gathered by Mr. Stone from a comparison of Italians and negroes on the Sunny Side plantation in Arkansas. When the present operators of the plantation took hold in 1898 they merely accepted such labor as they found on hand, 38 families of Italians with 200 working hands and 203 negro families with 600 working hands. The Italians were cultivating 1200 acres of cotton and the negroes 2600 acres. At the end of 1905, according to Mr. Stone, the Italians numbered 107 squads with 500 working hands, while the negroes numbered only 38 squads with 175 working hands, and the acreage cultivated by the Italians had increased to 3000, while that cultivated by the negroes had decreased to 900 acres. Moreover, the Italians were raising an average of 403 pounds of lint per acre and of 2584 pounds per hand, while the negroes were averaging 233 pounds per acre and 1174 pounds per hand.

These are but a few of the significant facts presented by Mr. Stone, which indicate the line that the history of the negro may hereafter take. With his present character unmodified in the right direction the negro cannot possibly keep pace with the white in industry, and, not keeping pace, must ultimately go to the wall. The man who tells him that and who gives him indisputable facts to consider is a benefactor to the negro. More of such facts as those collected by Mr. Stone may result in turning the present movement of foreign migration to the South into a real benefit to the negro. If competition of foreign-born whites shall develop industry, frugality and reliability in the negro, the South will offer to him his greatest opportunities in the world. If he fails to measure up to the test now confronting him, he must pass as members of other inferior races have passed.

The Fridmullens Coal & Coke Co. of Aracama, W. Va., has been incorporated with a capital stock of \$125,000 to mine and deal in coal and coke and other minerals; incorporators are Messrs. Charles D. Fridman of New Richmond, Ohio; William M. Fridman of Cincinnati, Ohio; C. W. Campbell of Huntington, W. Va.; M. B. and May Mullens of Logan, W. Va.

COTTON VS. WORLD'S GOLD AND SILVER OUTPUT.

COTTON PRODUCTION AND GOLD AND SILVER PRODUCTION.

Years.	Cotton, including Seed.	World's Gold and Silver Production.	
		Gold.	Silver.
1900-1901.....	\$534,000,000	\$254,576,000	\$224,441,200
1901-1902.....	512,000,000	260,992,900	223,691,300
1902-1903.....	552,000,000	296,048,800	208,594,000
1903-1904.....	673,000,000	325,527,200	220,371,600
1904-1905.....	683,000,000	346,892,000	217,717,000
Total for 5 years..	\$2,974,000,000	\$1,484,036,900	\$1,094,815,100

Total value world's gold and silver production for five years. \$2,578,852,000

Total value cotton crop for five years..... 2,974,000,000

Excess of cotton value over gold and silver production for five years..... \$395,148,000

What it means for the South to hold a practical monopoly of the world's cotton production is not generally appreciated nor the potentiality of this fully grasped. Destroy corn, and you could find a substitute; destroy wheat, and other grains would furnish bread for mankind; but cut short the South's cotton crop by one-half, and the financial and commercial world would stagger; destroy cotton, and civilization would be halted. Earth has no substitute for cotton. Cotton, the South's crown of glory, is the basis of the greatest industry of the world; it is the one staple which enters into every civilized life; it is needed in the palace of the king as well as in the humblest hut of the peasant; it is the glistening sail alike of the royal pleasure yacht and the ship of commerce; it is as essential in the hospital where it makes possible the surgery of the day as it is on the tented battlefield; it is the basis of the greatest manufacturing industry of the world, employing more than \$2,000,000,000 of capital and annually producing of manufactured goods an equal amount or more than iron and steel; it is the dominant power in commerce; it brings to the South from Europe an average of over \$1,000,000 a day for every day in the year.

The value of our cotton exports to Europe annually exceeds the total gold production of the world, and the total value of the crop is far in excess of the combined value of the gold and silver output of all earth. This, the richest possession which a beneficent Creator ever gave to any section of earth, is the great prize which the leading nations of earth have struggled in vain to capture. This fleecy staple makes the study of the South's weather conditions and its labor supply of general interest in every banking house in Europe and America. And yet how little do we show our appreciation of this mighty king—mightier by far than all the royal rulers of earth! We take this beautiful product, which should be the emblem of cleanliness and purity, and with the barbarous saw-gin tear and break its fiber, destroying 75 per cent. of its strength; we loosely cover it with inflammable material and dump it into the mud or let it stand for days and sometimes for weeks in the rains and storms of winter; we treat it as though it were the meanest of all human productions instead of the noblest, as though we despised its dainty and delicate whiteness, rivaling "the whiteness of the Alpine snow;" we gin it with the gin made by Whitney more than 100 years ago; we compress it with machinery a century old; we waste its substance and destroy its vitality; for a century we have rushed it to market as though eager to be rid of it, and in doing so have permitted Europe to reap the profit which ought to have been ours; and then we have wondered why the South has not grown rich out of its monopoly.

But a better day is dawning. This royal king is coming into his own. The ablest scientists are seeking to improve the quality of the seed and the method of cultivation; experts are working on better machinery to gin and clean and compress cotton; the world is anxious to fill the South's fields with labor that its production may be increased. This king of agriculture, king of manufactures, king of foreign commerce, this king of civilization itself, is touching with a magic wand the life of the South and quickening it with a wealth and power worthy of the country which he has chosen to fix as his perpetual abode. Here he promises to forever dominate cotton production and cotton manufacturing, and thus dominate the wealth and civilization of the world.

The great value of cotton to the South under the higher prices ruling of recent years, and which had ruled for a century, with a few brief exceptions, until from 1893 to 1899, shows the vast importance of cotton not alone to the South, but to the world. These figures show that during the last five years the exports of raw cotton to Europe exceeded the world's total production of gold for the same period by over \$200,000,000. In other words, if Europe had during the last five years gathered together every dollar of gold produced in all the mines of the earth and shipped it to the South it would still have fallen \$206,000,000 short of paying its debt to the South for raw cotton. No wonder the combined wealth of Europe is ever struggling to beat down the price of cotton to the lowest possible point. But how strange to find many of the financial and manufacturing interests of this country allied with Europe in seeking to lessen the South's prosperity for the benefit of Europe! When the total value of the cotton crop, including seed, is figured up for the last five years it sums up \$2,974,000,000, or \$395,000,000 in excess of the combined value of the gold and silver production of the world for the same period.

VALUES OF RAW COTTON EXPORTS AND OF GOLD PRODUCTION.

Years.	Exports of Raw Cotton.	World's Production of Gold.
1900-1901.....	\$317,816,429	\$254,576,000
1901-1902.....	284,279,190	260,992,900
1902-1903.....	310,635,370	296,048,800
1903-1904.....	375,076,775	325,527,200
1904-1905.....	402,840,242	346,892,000
Total for 5 years..	\$1,690,648,006	\$1,484,036,900

A CHEERFUL MAN OF EIGHTY.

One of the most gratifying letters received by the MANUFACTURERS' RECORD in many a day, from an octogenarian of Texas, is so inspiring that it is worthy of reproduction in our columns. The writer, who will be 80 years old next March, is Mr. John J. Dix of Benavides, Texas. He writes:

"No works are going on that I can take a part in, as I am too old and only fit to see what others are doing. Every industry mentioned in the MANUFACTURERS' RECORD has been put up in my day and generation. There is no telling where in the next 80 years we will get to in improvements. I shall not be here to see them, and can only imagine what they will be. But navigating the air will be one, and there will be thousands of others to benefit man. The United States of America will be all of North America from Panama to the British possessions on the north, and if in the course of human events should anything serious befall Great Britain, they, too, may be under the Stars and Stripes, the grandest and most powerful nation on the earth. History repeats itself, and the United States of America is the only assimilative nation on earth. All become Americans after a few years and are satisfied that no other nation on the globe is so strictly cosmopolitan in all things. Who would not live another century to behold the change that will be!"

"Texas is only 60 years old. I saw her born, March 2, 1836, and now she ranks as fifth or sixth State of the Union in everything."

"So goes the world, and other improvements will come up. Railroads will be run on tangents from point to point with fewer curves, with electricity in the main as motive power generated by machinery on the trains as they travel and operated really by their own motion after starting. What an idea! But it will be."

"As to the MANUFACTURERS' RECORD, I conceive it to be the best of its kind I have ever seen. If it could induce more industrial immigration to Texas, where the field is ample for years to come in all vocations, it would be a great thing, for the State is new and of vast possibilities known to or appreciated by but few. For but 10 per cent. of her resources have been only partially developed and but 10 per cent. of her territory occupied. There is room for one more always for generations to come. Wishing the MANUFACTURERS' RECORD much success, I am surely and truly a well-wisher."

Nothing of a darkening of the sun, of the moon or of the stars there; no trembling of the keepers of the house, no bowing of the strong man. The almond tree is still to flourish and the grasshopper is yet to become a burden. For there is no curtain before those that look out of the windows. Eighty years old, John J. Dix is more clear-sighted mentally than many a youngster of 25 years overcome by the sense of his importance in the world and his inability to run things as he would and, consequently, viewing things past, present and future through salmon-hued glasses. For a man who was on hand at the birth of Texas to be able in 1905, as is Mr. Dix, to gaze so cheerfully and hopefully upon his country and to write so strongly of its great future is an inspiration to other much younger men in the midst of things to continue doing and is an indication that he himself is mistaken in the belief that he is too old and only fit to observe what others are accomplishing. He may not be able to build a railroad or to operate a factory, but his keen appreciation of the current of events and his foresight based upon experience, dominated, as they are, by his intense optimism,

are the qualities needed to lead men up to the point of doing things and are sufficient to warrant the belief that Mr. Dix will live long enough to note the fulfillment of his prophecies.

HOW ENGLAND DEVELOPS INDUSTRIAL CENTERS.

The MANUFACTURERS' RECORD is in receipt of a very attractively-printed pamphlet illustrating and describing Trafford Park, Manchester, England. We are somewhat accustomed in this country to look upon the development of industrial suburbs to large cities or the undertaking to build new cities as purely American, forgetting at times that development enterprises of this kind are carried out on a broader scale elsewhere than we have ever known here. Because in the boom days which swept not only over the South and the West and Northwest, but over all the world—the speculative town boom having been more pronounced in South America and Africa and elsewhere than it ever was in the South—really meritorious development work has been given somewhat of a black eye. It is to be hoped that this country may never again see such a wild town-let speculation as it had in the West between 1880 and 1890 and in the South between 1888 and 1892, but what can be done in legitimate industrial development work is illustrated in the history of Trafford Park, the study of which would be an inspiration to the most active industrial developers in America.

The picture of Trafford Park in 1900 shows a great stretch of woodland and meadow land without a house in sight. Trafford Park of today is the home of about 75 great manufacturing enterprises, including the Westinghouse plant with its thousands of hands, the English works of the American Car & Foundry Co., great steel works and other enterprises, as well as large mercantile operations of importers and others. Several years ago Mr. Marshall Stevens, who had been one of the leaders in the Manchester ship canal, resigned his position as managing director to take charge of the management and development of Trafford Park, a large landed property adjacent to Manchester.

What has been accomplished in that period is an illustration of the fact that, accustomed as we are in this country to boast of American development, the growth of many of the leading cities of Europe almost puts to shame the advancement of any city in America except possibly New York, and the Trafford Park development illustrates the amazing industrial progress of the Manchester district. One of the photographs in the Trafford Park pamphlet shows an arch erected at the entrance to the Park upon the visit of the King and Queen to the Manchester docks on the 13th of July, 1905, and over this in big letters, "Wake up, England!" Certainly that part of England seems to have waked up. Some months ago Mr. Stevens made a visit to the United States and presented to the leading railroad officials and shippers the advantages claimed for his enterprise, and the great work already accomplished shows what can be done with a sound undertaking in the hands of a man of breadth of view and business ability and capital. American cities might well send agents to Manchester to study the results of this work.

THE COTTON MOVEMENT.

In his report for December 29 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 120 days of the present season was 6,956,959 bales, a decrease under the same period last year of 953,029 bales; the exports were 3,395,627 bales, a decrease of 807,448 bales; the takings were, by North-

ern spinners, 1,186,958 bales, an increase of 29,516; by Southern spinners, 921,850 bales, an increase of 25,777 bales.

VARIABLE SOCIOLOGIZING.

It emerged again at Washington December 8 in the following bold impressionist sketch:

"There are 60,000 children in Southern cotton mills, from 6 to 16 years of age, toiling 12 hours a day or 12 hours a night."

Its next appearance shifted somewhat from its previous positiveness. It came out in this form:

"In the Southern States there are 60,000 children, from 6 to 16 years of age, working in the cotton mills alone. They have little holiday, even at this season, and the working day is 12 hours in most of the States. Many of these little ones must work at night."

This was the introduction to a mass of gush having a practical purpose of appealing to the emotional for campaign funds in connection with the establishment at Atlanta, Ga., of a branch of that bit of New York impertinence calling itself the "National Child-Labor Committee."

If the Atlanta branch is to furnish no more strictly harmonious statements than those quoted in furtherance of the campaign fund, that fund may hardly be expected to bring any benefits or to do much toward the abolition of that figment of a runaway imagination which is known as "slavery" in Southern cotton mills.

It may be suggested that there is quite a difference between the statement that 60,000 children are "toiling 12 hours a day or 12 hours a night" and the statement originating from the same mind that the children are "working in the cotton mills * * * and the working day is 12 hours in most of the States. Many of these little ones must work at night." It may also be suggested that the number of "children" in the cotton mills might have been estimated as 80,000 just as safely as 60,000. Before kind-hearted Southerners give either their financial or moral support to this revival of a threshed-out agitation in the South, now having its salaried agent on the ground, it might be well for them to consult well-informed residents of their respective States as to the facts about this "slavery," and about the actual number of "children" in the cotton mills and their condition there. The money that otherwise may be wasted is of small moment. It is the injury that may come to children of the South through mistaken and misleading agitation which is to be considered.

COAL TRADE.

More than eight pages of the *Coal Trade Journal* of New York in its issue of December 27 was occupied with the review of the coal trade during the year. It finds that 1905 has been a most extraordinary year in many respects, and in none more so than in the fuel industry, and draws a conclusion that although there have been ups and downs during the year, the ups have it in the matter of output at any rate. Mr. Frederick E. Saward, editor and proprietor of the *Coal Trade Journal*, has written for this week's issue of the MANUFACTURERS' RECORD a review of the year with special reference to the output of Southern coal mined.

The thirty-ninth annual convention of the American Institute of Architects will be held at Washington, D. C., January 8-11. The board of directors will meet on Monday, Tuesday will be devoted to business and reading of papers with a banquet in the evening, and Wednesday and Thursday to business.

The oyster-packing plants at Biloxi, Miss., are suffering from scarcity of labor.

A YEAR IN SOUTHERN AGRICULTURE.

Because of the far-reaching importance of cotton, greater than that of any crop grown in the world, and because the cotton crop in value ranks next to the leader, corn, other crops raised in the South, either almost exclusively like cotton for this country or common to different parts of the land, are not always given the consideration they deserve. Hence it is interesting to study the figures of a few leading farm crops in 1905.

About a third of the cotton crop is yet to be marketed. It may, however, be safely estimated that the total value of the crop, including the seed, will reach \$680,000,000, of which at least \$600,000,000 will go to farmers in the cotton belt of the South. The total value of the cotton crop is more than half the value, \$1,116,696,738, of the whole corn crop of the country. The share of the South in the latter crop is shown in the following table:

States.	Bushels.	Values.
Alabama.....	42,971,518	\$27,501,791
Arkansas.....	38,323,728	21,078,056
Florida.....	6,518,702	4,302,343
Georgia.....	47,255,164	33,078,615
Kentucky.....	94,893,638	40,894,264
Louisiana.....	19,516,499	11,905,064
Maryland.....	23,202,536	11,137,217
Mississippi.....	30,027,569	19,517,929
North Carolina.....	37,598,331	21,061,652
South Carolina.....	20,489,860	15,155,836
Tennessee.....	77,207,912	38,603,956
Texas.....	139,146,404	68,181,738
Virginia.....	43,514,874	23,062,883
West Virginia.....	22,813,122	12,090,955
Total South.....	643,468,897	\$350,482,290
Total United States.....	2,707,993,540	1,116,696,738

The 14 Southern States produced 643,468,897 bushels, or nearly one-quarter of the total, 2,707,993,540, produced in the country, such typical corn-growing States as Illinois, Iowa, Missouri, Nebraska, Kansas and Indiana producing nearly 60 per cent. of the total crop, and the South's share, \$350,482,290, of the value of the total corn crop, nearly a third, was more than half the value of the total cotton crop.

The South is hardly a wheat-growing section compared with other parts of the country, its crop having been 62,900,000 bushels, Maryland still leading in that section with 13,196,790 bushels, with Texas' 11,117,942 bushels a close second. The following table gives the production and value by States:

States.	Bushels.	Values.
Alabama.....	1,041,082	\$1,051,493
Arkansas.....	1,564,808	1,408,327
Georgia.....	2,106,556	2,254,015
Kentucky.....	8,809,955	7,664,661
Maryland.....	13,196,790	10,821,368
Mississippi.....	28,285	26,871
North Carolina.....	3,975,278	4,054,784
South Carolina.....	1,942,556	2,155,016
Tennessee.....	6,348,600	5,777,226
Texas.....	11,117,942	9,788,789
Virginia.....	8,418,672	7,408,431
West Virginia.....	4,373,080	3,892,041
Total South.....	62,923,404	\$56,299,021
Total United States.....	692,979,489	518,372,727

The value of the wheat crop in the country exceeds by nearly \$3,000,000 the value of the hay crop. The latter is not infrequently mentioned as a rival to cotton in value, and yet in 1905 it was but \$515,959,784, or less by \$150,000,000 than the value of cotton, while, as the following table shows, the South contributed more than a fifteenth of the crop and nearly one-tenth of the value:

States.	Tons.	Values.
Alabama.....	104,966	\$1,311,174
Arkansas.....	130,664	1,254,371
Florida.....	19,239	312,634
Georgia.....	132,081	2,080,276
Kentucky.....	599,313	6,371,016
Louisiana.....	49,422	568,353
Maryland.....	371,814	4,432,923
Mississippi.....	75,273	840,799
North Carolina.....	201,013	2,572,966
South Carolina.....	84,479	1,128,639
Tennessee.....	513,114	6,356,673
Texas.....	751,760	6,104,291
Virginia.....	572,607	7,236,300
West Virginia.....	773,463	9,010,844
Total South.....	4,409,238	\$49,473,362
Total United States.....	60,531,611	515,959,784

Things are reversed in the case of tobacco, in which the South dominates with

its 461,531,105 pounds in the total of 633,033,719 pounds, and its \$35,021,641 in the total value of \$48,674,118:

States.	Pounds.	Values.
Alabama.....	234,450	\$37,512
Arkansas.....	734,300	102,802
Florida.....	3,192,600	574,668
Georgia.....	1,068,900	181,713
Kentucky.....	228,975,420	16,028,279
Louisiana.....	31,590	7,875
Maryland.....	19,592,950	1,175,577
Mississippi.....	66,650	9,998
North Carolina.....	83,156,160	7,317,742
South Carolina.....	9,254,464	805,138
Tennessee.....	31,873,536	2,390,515
Texas.....	234,590	44,556
Virginia.....	79,951,725	6,076,331
West Virginia.....	3,163,950	288,936
Total South.....	461,531,105	\$35,021,641
Total United States.....	633,033,719	48,674,118

The South's proportion of the oat crop is about the same as its proportion of the hay crop, but it must be noted in explanation that the open weather of the South permits a far greater degree of grazing than is enjoyed in other parts of the country, while cottonseed products are becoming of more and more value as foodstuffs:

States.	Bushels.	Values.
Alabama.....	3,165,574	\$1,614,443
Arkansas.....	3,992,838	1,639,217
Florida.....	359,484	186,932
Georgia.....	3,522,075	1,806,709
Kentucky.....	5,487,559	1,920,646
Louisiana.....	443,440	199,548
Maryland.....	918,532	339,672
Mississippi.....	1,671,319	835,960
North Carolina.....	3,118,570	1,465,634
South Carolina.....	3,056,297	1,681,018
Tennessee.....	3,062,311	1,194,413
Texas.....	28,713,416	11,485,366
Virginia.....	3,140,970	1,224,978
West Virginia.....	1,980,586	772,429
Total South.....	62,533,561	\$26,413,966
Total United States.....	963,216,197	277,947,537

In the matter of Irish potatoes, too, it should be borne in mind that while the South is credited with less than a tenth of the total crop of the country, it is the section which raises at least four-fifths of the sweet-potato crop, equal to or even greater than that of its share of the value of the Irish-potato crop:

States.	Bushels.	Values.
Alabama.....	763,520	\$671,808
Arkansas.....	1,435,710	1,040,765
Florida.....	308,590	269,900
Georgia.....	569,755	628,046
Kentucky.....	3,012,825	1,596,797
Louisiana.....	585,344	532,663
Maryland.....	2,758,895	1,690,159
Mississippi.....	644,930	518,190
North Carolina.....	1,992,391	1,355,224
South Carolina.....	767,750	730,783
Tennessee.....	1,888,000	1,005,040
Texas.....	2,236,160	2,079,629
Virginia.....	4,628,820	2,592,139
West Virginia.....	3,025,088	1,754,551
Total South.....	24,599,038	\$16,655,796
Total United States.....	260,741,294	160,821,080

The South monopolizes rice-growing in this country, with an ever-growing tendency to expand in the Southwest. Texas and Louisiana producing in 1905 more than 12,150,000 of the total 12,933,436 bushels produced in the South, Arkansas appearing in the statistics with a production of 11,340, and Alabama producing twice as much as North Carolina:

States.	Bushels.	Values.
Alabama.....	45,780	\$45,780
Arkansas.....	11,340	11,340
Florida.....	77,840	194,040
Georgia.....	182,080	185,722
Louisiana.....	6,137,820	5,462,660
Mississippi.....	27,432	27,432
North Carolina.....	22,776	22,776
South Carolina.....	402,402	426,546
Texas.....	6,025,966	6,025,966
Total.....	12,933,436	\$12,285,831

Sugar-cane, with its syrup and molasses, is another Southern specialty, expanding both in Georgia and Florida, as well as in the Southwest, and representing an annual value of between \$20,000,000 and \$30,000,000, while another, peanuts, follows closely upon rice.

There are many more millions of dollars in miscellaneous vegetables, orchard fruits and small fruits, in dairy products, in poultry products and in live-stock sold from the farm or consumed there, and it is a conservative estimate that the South's farms produced in 1905 to the value of at least \$1,800,000,000.

WORLD SURVEY OF IRON AND STEEL.

By J. STEPHEN JEANS, Secretary British Iron Trade Association.

[Written for the Manufacturers' Record.]

It is some years since I had the honor paid to me of being permitted to address the readers of the MANUFACTURERS' RECORD. Much has happened since then. The Steel Corporation was then a force of unknown and more or less disquieting potentialities. That force has, like most new forces, done less harm and probably less good than was apprehended. It has certainly not brought about the downfall and decay of the individual operator. The activity in progress in the building of new plants and the extension and improvement of old ones when I was last in the United States, in 1902, proved that the bogey raised by the Steel Corporation had been laid, and the world goes on much as it did before the trust came into existence. If the world wants iron and steel it will, as before, buy in the cheapest market, whether that be controlled by an individual or by a corporation.

Blast-Furnace Capacities.

Since 1902 the means of producing iron and steel have been greatly increased in all countries alike. My friend, Mr. Swank, estimates the present capacity of the blast furnaces of the United States at over 30,000,000 tons a year. This is probably equal to about one-half of the capacity of the whole world today. Germany and Great Britain can under pressure produce about 22,000,000 tons, and perhaps Russia, France and other countries could produce about 9,000,000 tons more, but this could only be done with some difficulty. It is necessary to have about 10 per cent. of furnace plants under repair or reconstruction at any one time, and Germany has been working close up to the limit for some years past. As an evidence of this, let me say that in 1904 Germany had only 43 furnaces idle out of 297, and probably about 30 of these were out for the reasons stated, while the balance of 13 might be assumed to be old and unusable plants. Great Britain has a much larger proportion of her plants inoperative, and always has had, mainly because of the more ancient character of the conditions under which many of them have been worked. It is not very probable that any large proportion of the plants now inactive in this country will again be put in blast. At the same time there is a possibility that some of them may be reconstructed, and, indeed, the process of relining or reconstruction is generally being carried on to a greater or less extent. No other European country is in a position to make large additions to its present output, but the contributions possible from France, Belgium, Austria, Russia and Sweden would, unitedly, make up a material figure and would probably run into more than 1,000,000 tons.

Probable Demand and Raw Material.

The present iron-trade situation appears to be governed by two leading factors—the first that of the extent of the probable demand, and the second that of the supplies of raw material that can be depended on to meet that demand at a reasonable instead of at a more or less prohibitive price. On both of these problems we would naturally seek a certain amount of guidance from the experience of the past. That experience, however, is not in the present case likely to be of much avail. The conditions of the iron trade change more rapidly than that of any other industry. The circumstances that environ both the producer and the consumer of iron in practically all of its many shapes and forms have not only been attended

with numerous radical changes—they have largely involved revolution.

Let us now see what is the situation in respect of iron ores, which in all countries is a controlling factor. The following table throws light on the growth of output:

Output of Iron Ores, in Thousands of Tons.	1890.	1904.
United States.....	16,036	29,367
Great Britain.....	13,781	13,774
Germany.....	11,406	22,047
France.....	3,472	6,500
Spain.....	6,065	7,965
Austria-Hungary.....	2,151	3,300
Russia.....	1,736	5,272
Sweden.....	941	4,085
Totals.....	55,588	92,310

In this interval there has been an increase of output in these eight countries to the extent of 36,720,000 tons, or nearly 70 per cent. The corresponding increase in the output of pig-iron in the same countries has been 17,470,000 tons. These figures would seem to show that in the period that has intervened since 1890 leaner ores have been used, since the average consumption of additional ore per ton of additional pig produced has been about 2.2 tons, against an average consumption of 2.03 tons in 1890.

I am, of course, aware that nothing like even approximate accuracy can be arrived at in either present or future attempts to compute the iron-ore resources of the world, because there are vast areas that have not yet been surveyed, and of which comparatively little is known. This remark may apply to a large part of the South American republics, and to some extent also to the Dominion of Canada, but hardly to the United States in a general way.

At the same time it is interesting to note that such estimates, made in Sweden within the last few months, place the known iron-ore resources of the world at the equivalent of well over 100 years of the present annual consumption. Within that time the consumption may be doubled—it is already considerably increased since the estimates in question were made—and, of course, the life of the supplies will be proportionately shortened.

The output of pig-iron in the countries that have already been tabulated has between 1890 and 1904 increased by a figure that is greatly in excess of any corresponding period. The principal increase has taken place in United States, from 9,203,000 tons to 16,497,000 tons, but Germany, with an advance from 4,651,000 tons to 10,058,000 tons, has not been so far behind as might be expected. The advance in the third most important country, Great Britain, has only been from 7,904,000 tons to 8,563,000 tons. In only one other country has the advance been over 2,000,000 tons—Russia produced 902,000 tons in 1890 and 2,978,000 tons in 1904.

Per Capita Consumption.

Let us now consider how the consumption of pig-iron has advanced per head of population. This information is set out in the following table, in decimal parts of a ton:

	1890.	1904.
United States.....	0.15	0.29
Great Britain.....	0.18	0.18
Germany.....	0.10	0.17
France.....	0.05	0.08
Belgium.....	0.17	0.23
Sweden.....	0.09	0.10
Austria-Hungary.....	0.2	0.03
Russia.....	0.1	0.02
Spain.....	0.1	0.02

These figures show that in every case there has been a more or less considerable increased per capita consumption, except in the case of Great Britain and in that of Sweden. In the case of the United

States there is likely to have been a much more material increase in 1905 than in any previous year, and the average may even have risen to 0.30 ton per capita, in which case it will have doubled within 15 years. It has already, in 1902-1903, been as much as 0.23 ton per capita. A consumption in the United States of 0.30 ton per capita would call for a vast increase on any figures hitherto attained. Is the thing improbable? Perhaps. But it certainly is not impossible, when we remember to what extent iron and steel have already displaced other materials and the great field open to it in the manufacture of rolling stock, the laying down of tramways and plate ways, the erection of structures of every kind, and in a thousand other directions. Spain, Russia and Austria-Hungary hardly consume more than a tenth part of the present-day consumption in indifferently good times of the United States, and they have great populations that must advance in this inevitable direction, not to speak of three countries that have little more than begun in the race—India, China and Japan—whose joint population of nearly 800,000,000 would, on the United States basis, consume about 160,000,000 tons of iron annually, or three times the greatest output the world has hitherto reached.

Increased Output of Iron and Steel.

Within the last 15 years the output of this metal throughout the world has increased by 23,830,000 tons, or 200 per cent., and the output in 1905 is likely to be perhaps 2,000,000 tons greater than that of 1904. What is likely to be the rate of growth in the future? This is the dominating factor in the case. Assuming that the quantity of pig-iron now annually produced will reach 52,000,000 tons, it is probable that nearly 38,000,000 tons of that quantity, or 73 per cent. of the whole, will be absorbed in the manufacture of steel. The remainder will be used in the production of direct castings from the blast furnace, foundry castings and finished iron. Hence it is clear that the future of the iron industry will depend on the demand for steel. The present American iron output is at the rate of over 25,000,000 tons a year, and of that quantity probably more than 20,000,000 tons is being taken up by steel. Let us see how steel has advanced in the period under review:

Production of Steel in 1890 and in 1904, in Thousands of Tons.	1890.	1904.
Country.....		
United States.....	4,277	13,767
Great Britain.....	3,579	5,027
Germany.....	2,232	8,930
Russia.....	375	2,700
France.....	683	2,080
Belgium.....	246	1,083
Sweden.....	168	333
Spain.....	75	195
Austria-Hungary.....	250	1,200
Other countries.....	100	500
Totals.....	11,985	35,815

Now, if the manufacture of steel had been an entirely new industry, originated, say, about 1830 or 1840, the remarkable growth shown by these figures would have been readily understood. But steel is so far from being a new industry that its manufacture dates back to prehistoric times, and it is believed to have been known to the Egyptians as well as to the ancient Greeks and Romans. Nevertheless, we find that the last 14 years have witnessed an advance in output to the extent of nearly 24,000,000 tons, or more than twenty times the output of the whole world only half a century ago. One naturally inquires, where is this extraordinary progress likely to end? Is it to be continued on the same scale or on an even larger scale in the future, and if so, what is that larger scale likely to be and by what countries is it likely to be met?

United States to Supply Future Increase.

No one who has carefully studied the matter can fail to see that the United

States must contribute for the next half-century, at any rate, the greater part of any future advance, alike in pig-iron and in steel. No other country has the same supplies of cheap and rich raw material. No other country has its conditions of production in such good shape. No other country has such a colossal home demand. No other country can to the same extent enjoy the great benefits attendant on production on a large scale. No other country is better protected from outside competition.

In some quarters surprise and disappointment have been expressed that the iron industry of the Southern States has not made greater progress. The anticipations entertained 10 years ago have perhaps hardly been realized. But that is not a matter that need give anxiety. Experience proves that mankind prefers to skim the best of all natural supplies at the beginning and to leave the inferior and secondary products until the end. This is the proceeding now and for a number of years followed on the Lake Superior ranges. When the cream of the known Lake Superior has gone, as it will assuredly do in a few years at the most, the Southern ores will have a better chance.

Having twice visited the Southern States and examined the Alabama ores on the spot, I know something as to their merits and prospects. They are all right, and like good wine, they "need no bush." Probably too much was made of them by some enthusiastic Southerners at the outset. It is certain that the claim to produce pig-iron in their locality for 25s. per ton has not been maintained. Their prospects of export on a large scale have not been realized. The average annual output of pig-iron from the United States over the last four years has not exceeded 45,000 tons, and it is not likely to increase at present prices. But this is not a criterion of what we may see in the future. Although there are many countries in the world, less than 20 of them are pig-iron producers, and not more than four or five produce iron and steel for export. The "manifest destiny" of the United States, with their vast resources, appears to me to be to produce more and more largely for export, and if it is found more profitable to export the finished forms of the metal rather than the cruder forms, so much the better for those engaged in the business.

The Present Boom.

There are probably those—I have met some myself—who doubt whether the present "boom" is likely to last, and who regard it as a mere "flash in the pan" that will soon come to an end. I am not one who thinks thus. What do the past records tell us? That the average annual steel production of the United States rose from 4.3 million tons in the five years ended 1894 to 7.2 million tons in each of the five years ended 1899 and 13.4 million tons in each of the five years ended 1904. In the five years ending with 1909 the average is not unlikely to be over 18,000,000 tons, and I should anticipate that by 1920 it may reach well on to, if it does not quite attain, 30,000,000 tons. These are conservative figures if the progress made in the five years ended 1904 is taken as a measure of the probabilities of the future. In all this there is surely full justification of the progress that has been made by American firms in improving and extending their plants.

The price of pig-iron is generally, but not always, a function of the cost of production. But that statement raises the important question, what is and what makes the cost of production? In all countries and in all districts the cost varies according to the conditions of the producer. In the United States, as we all

know, the cost of producing Bessemer pig-iron between 1890 and 1895, with \$1 coke and \$3 ore, was a very different matter to what it is today, when everybody has appreciated the increasing value of raw materials, which are liable to exhaustion and not overabundant, and when the bulk of the supplies is in comparatively few hands that may practically within wide limits make their values what they please. It will not be overlooked in this connection that when the Steel Corporation was founded the value of the ores at its disposal was computed at \$700,000,000, which worked out, I think, to about \$1 per ton of the total quantity computed to be then available, and that, too, before any provision had been made for working or transportation. Probably this was not overstated. On the contrary, I should be surprised if the directors of the Steel Corporation, in view of the fuller knowledge that they now possess as to the limited volume of iron ores at command in relation to the increased and increasing output of iron, would not place the value of their unworked ores at more than they did in 1901. In that year the total output of American iron ores was under 29,000,000 tons for an output of 15.8 million tons of pig-iron. Today the output of American iron ores is probably at the rate of over 40,000,000 tons a year, which is only 4,500,000 greater than the ascertained output of 1902, and it may be nearer 45,000,000 tons, which would be 16,000,000 tons over the output of 1901, the year preceding the formation of the Steel Trust. I am not just in a position to say what proportion of this output the Southern States can be relied on to supply, but it would surprise me if they do not in 1905-1906 do much better than they have hitherto done in any previous period of equal duration.

British Fiscal Policy.

The present situation is likely to be more or less affected by the future fiscal policy of Great Britain. If it should happen that the British electorate decides on the adoption of protection on the lines prescribed by Mr. Chamberlain, one of the largest markets now open to the United States and other protectionist countries would be virtually closed to the United States and to other foreign countries, while Great Britain would be better able than now to compete in other countries that are at present more readily at the disposal of Germany and the United States than to Great Britain, because the British free-trade system does not lend itself to dumping. My own view is that such a change of British policy is not imminent, and that neither the policy of protection nor that of retaliation pure and simple is making headway in the British Isles. Indeed, it is regarded by many as having lost ground. Of this we are likely to know more in the course of the next few months.

London, England, December 17.

ORE VALUED TOO LOW.

The *Wall Street Journal* of last Friday published a dispatch from St. Paul in which the intrinsic value of ore properties in the ground is discussed and comment made on the matter by Mr. James G. Hill of the Great Northern Railroad. The views expressed so closely coincide with Mr. Jeans' that it is worth while reproducing the dispatch, because the question of the future value of ores affects every line of industry in the world. The dispatch follows:

"The extent of the iron-ore properties of Minnesota are estimated at 1,300,000,000 tons, of which the Hill share is 500,000,000 tons. The distribution of the ore holdings is as follows: United States Steel Corporation, 600,000,000; Great

Northern, 500,000,000; miscellaneous, 200,000,000—total, 1,300,000,000.

"When Charles M. Schwab estimated the Steel Corporation's ore resources as worth \$700,000,000 he was accused of being an optimist. But that represented only 700,000,000 tons, at a valuation of \$1 per ton, of which amount 100,000,000 have since been used, leaving an actual balance of 600,000,000, for Mr. Schwab's estimate was not exaggerated.

"If there were no more than that which the Steel Corporation has, and it used only 20,000,000 tons a year, the supply would be exhausted in 30 years. As it is, the supply will not last much longer than that, because the consumption is likely to exceed 40,000,000 tons a year for the next 30 years.

"The past year the output was 35,000,000 tons, and next year it will be about 38,000,000, divided as follows: United States Steel, 20,000,000; independents, 16,000,000; under Great Northern lease, 2,000,000.

"The ore that Mr. Schwab figured at \$1 per ton is today worth twice that amount—perhaps three times—figuring on what the ore lands could be bought at for in the market. Mr. Hill is not going to sell his share for any price likely to be offered. In conversation recently he said that if the Steel Corporation should sell him ore for \$2 or \$3 per ton, he would turn around and sell it back to them for \$5 per ton, because they have to have it to stay in the steel business.

"If anyone induces Mr. Hill to part with his holdings in these mines, it will be at Mr. Hill's price. His holdings cover 70,000 acres, of which 21,000 acres are between formation lines or what are called the hangings and the foot walls. Last year Great Northern handled 5,500,000 tons, and in 1906 it will haul 7,000,000 tons.

"Four or five important mines are operated by outsiders under lease on royalty to Great Northern, the aggregate output last year being 2,000,000 tons, but beyond this there is no indication that the Hill properties are in the market or likely to be. J. J. Hill recently denied emphatically that he had sold any of his ore properties or that he had any intention of doing so. It is not his policy to tie up his resources, however, so that the world cannot enjoy full use of them. In one way or another his ore will all be brought to market as needed. The question of vital concern to the United States Steel Corporation is not how to get Mr. Hill's ore, but where will the ore come from 30 or 40 years from now.

"Great Northern has ore lands in Montana and Washington as valuable, as far as they go, as those north of Lake Superior. Little is heard of these mines partially because Mr. Hill has no particular reason to exploit them and partially because they are limited in extent, and there is reason to believe they will be only an incidental factor in the problem of ultimate supply.

"Mr. Hill says: 'Why should I sell those ore lands? A ton of ore is certainly as good to me as a dollar, and its value is bound to increase greatly. We have sold no ore lands and do not intend to sell any to United States Steel nor to anybody else. They are not on the market. They are not for sale.'

It is announced that Capt. J. F. Merry of Manchester, Iowa, in charge of the immigration work of the Illinois Central Railroad, will write a history of the Delta sections of Mississippi and Louisiana.

Commercial organizations of Nashville will consolidate next month under the name of the Nashville Board of Trade.

SOUTH'S PART IN WORLD'S COAL PRODUCTION.

By F. E. SAWARD, Editor *Coal Trade Journal*.

[Written for the Manufacturers' Record.]

At the end of the year one may take up the threads of trade matters, and, passing them in review, turn out facts of more or less interest. In the coal trade one may find much that is of interest and value; much that should please the people of this country. I am brought to this conclusion by reading a statement showing the extent of the industry in various countries.

The British Board of Trade has just issued a statement of the coal production and consumption in the principal countries of the world, which makes the total for 1904 790,000,000 gross tons. The United States leads, with 314,000,000 tons, and the United Kingdom comes second, with 232,428,000 tons. Germany is a bad third, and the output of other countries is unimportant. The United States and England produced nearly two-thirds of the world's output of coal. The production of the leading countries was as follows, according to the Board of Trade:

	1904.	1903.
United Kingdom.....	232,428,000	232,334,000
Germany.....	120,816,000	116,638,000
France.....	33,838,000	34,218,000
Belgium.....	23,507,000	23,797,000
United States.....	314,563,000	318,068,000
Russia.....	19,318,000	17,818,000
Austria-Hungary.....	12,731,000	12,208,000

The production of coal by the colonies of Great Britain was 26,322,000 tons in 1904 and 25,706,000 tons in 1903. This, added to the production of the United Kingdom, makes the output of the British Empire 258,750,000 tons in 1904 and 256,040,000 tons in 1903.

The Board of Trade also estimates the consumption of coal in the leading countries of the world. In this particular the United States stands distinctly as the foremost country. A large proportion of Great Britain's coal output is exported, but that of the United States is nearly all consumed at home; therefore this country consumes almost double the amount of coal that the United Kingdom does. The following table shows the consumption of coal of the principal countries of the world:

	1904.	1903.
United States.....	307,610,000	314,114,000
United Kingdom.....	166,606,000	166,532,000
Germany.....	107,160,000	103,114,000
France.....	45,559,000	46,442,000
Russia.....	22,953,000	21,223,000
Belgium.....	21,106,000	21,317,000
Austria-Hungary.....	18,000,000	18,123,000

The consumption of coal per capita in the United States is put at about 3.76 tons, and in the United Kingdom it is 3.89 tons. Were the tonnage of the United States averaged by dividing the quantity produced by the population where coal is the standard fuel, the per capita would no doubt be greater, for in a large area of this country coal is seldom used—as in the South and far West—for domestic purposes. It may be stated also that the figures above given do not include the lignite of certain of the European countries, such as Germany, France and Austria, the total of which is something like 73,000,000 gross tons.

In treating of the output of this country one may be pardoned for saying that during the past year the trade was good as to tonnage, while the price will not average up any better than in 1904. During both of these years there was a period when the coal was disposed of at very low prices, oftentimes below the cost of production, if one takes into consideration the capital invested. This condition of affairs can be remedied by concerted action on the part of the producing interests.

As the MANUFACTURERS' RECORD is particularly devoted to the Southern interests in coal, as in other matters, it is interesting to note the recent growth of the out-

put, together with an estimate for 1905, in the several States now grouped as Southern. As a ready means of comparison I have omitted the "000" (thousands) in each yearly statement. Figures are of tons of 2000 pounds:

States.	Tons, 1890.	Tons, 1900.	Tons, 1905.
Alabama.....	4,000	8,400	12,500
Arkansas.....	400	1,447	2,200
Georgia.....	228	315	400
Kentucky.....	2,700	5,300	7,750
Maryland.....	3,357	4,025	4,900
North Carolina.....	100	150
Tennessee.....	2,169	2,500	4,900
Texas.....	1,840	9,680	1,200
Virginia.....	784	2,400	3,750
West Virginia.....	7,390	22,617	33,000
Indian Ter.....	869	1,900	3,200

The progress shown is of decided importance. It will thus be seen that there has been a very lively increase in the tonnage from the States mentioned, and surely there is sign of yet further growth. The railroad development in many of the States has been great during the past year, and all these lines, completed or projected, appear to have coal as an ultimate tonnage in view, and it is for the very good reason that has already been said. Coal is a more secure tonnage than even cotton or corn. The acre of coal yields a longer lifetime of tonnage than either of those other products. One may start with the Coal & Coke road of West Virginia, the extensions of the Chesapeake & Ohio and the Norfolk & Western into Kentucky, the Louisville & Nashville and the Southern into Tennessee, Kentucky, Virginia, and the extensions of the two last-named into Alabama, and it is coal that is the magnet, as one might say, that calls for all this railroad development. Some recent very important industrial development and expansion may call for a larger coal and coke tonnage even during the current year, in spite of the very florid style of John W. Gates, for the other people now interested in Southern coal and iron will see that there is "something doing." I am told that the mine inspector of Alabama gives it as his opinion that the output of coal in that State for 1905 will run up to 13,000,000 tons, and the last report of the commissioner of Tennessee tells of "great developments." We all know what has been done, and there is much of hope for the future based upon the records of the past. Just as a sample of the way in which things are going, one might read the story of the building of the South & Western Railway. Along the line is an inexhaustible supply of timber from virginia forests, the cutting of which has not hitherto been practicable owing to the absence of railway facilities. The scheme to connect the States of the Middle West with the Atlantic seacoast and give to the rich coal fields of Virginia and Kentucky another outlet and a competitive market is one of the most important projects. The work of building the great trunk line, which will soon be an established fact, other lines may hear of at the inception of the project, but the work done by the Davis (with the Coal & Coke road) and the Carter forces (with the South & Western) to develop the Southern timber and mineral resources are worth special mention.

The coal-mining business lacks much of being like any other in the investment required. The life of a mine is, on an average, 12 years. In that time a reasonable profit must be made on the money put into the business and enough besides to pay for the land and the plant. If the operator does not succeed in doing this he has lost money, for the plant is not worth much after the coal is exhausted. It is probable that the average investment in soft-coal mines is \$50,000. It can be seen at

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The pace of progress in the development of the resources of Alabama is becoming steadier as its speed increases. And now that Alabama steel is no longer an experiment, the dreams and predictions of the enthusiasts, who created what was called a "boom" some 15 years too soon, are going to be more than fulfilled, and that in the near future; in fact, only the lack of labor will retard the multiplication of industries in Alabama. There is no longer any lack of capital.

There have been two dreary halts in the development of Alabama's main resource, i. e., iron-making material—ore, coal and limestone. Mr. Abram S. Hewitt of New York had laid plans for large undertakings in Alabama when the coming on of the Civil War necessitated their abandonment. Then after De Bardeleben and Sloss had proved out the practicability of making high-grade foundry iron at less cost than anywhere else in the world, there were discovered in the Lake Superior region immense deposits of high-grade "Bessemer" ores susceptible of being mined with steam shovels. And the iron world, realizing that this was an age of steel, turned its back on Birmingham and other Southern districts in a mad, wild rush for Mesaba.

It has been only since, by the open-hearth process, it was demonstrated that steel with no equal for some and no superior for any of the uses made of American steel was being actually manufactured out of Alabama pig-iron—it has been only since this was proven at the Ensley works of the Tennessee Coal & Iron Co. that the iron world, with the steel world by its side, began again to turn Alabamaward.

And it is now admitted that Alabama makes not only foundry iron for less cost than foundry iron can be produced elsewhere, but also that Alabama can and does produce the least expensive steel. West Virginia coal is now beginning to be so appreciated that coal-bearing lands in that State are in spots beginning to fetch prices commensurate with their value, and millions are being eagerly invested in West Virginia coal and in railroads to haul that coal where only paltry thousands were half-heartedly placed less than 10 years ago. Heretofore coal and ore lands in Alabama have been selling for a song in comparison with their real value. But what has occurred during the last three years in West Virginia in respect to coal will be repeated in Alabama in respect to all the raw materials used in making iron and steel, as well as in coal lands. This is one of the inevitable results of what has been absolutely demonstrated by the successful conversion of what used to be considered highly phosphoric grades of pig-

many persons are blind to the cost of coal. They figure that if an operator gets a reasonable profit on each ton produced he ought to be satisfied, and he probably would be if the same amount of coal was dropped back into the mine, for the net cost per ton, to allow the business to go on indefinitely. But this is not so. When his stock of goods is exhausted he still has the machinery for producing it on his hands and no material to work with. The plant must either be moved or sold for scrap iron, and the one is about as good as the other. The mine that is producing a good quantity of coal which is sold at a fair profit, with enough added to provide for the sinking fund, is a good investment, just as safe as any other, and sure to return the money put into it sooner or later.

New York, December 26.

ALABAMA'S IRON AND STEEL POTENTIALITIES.

By THOMAS P. GRASTY.

(Written for the Manufacturers' Record.)

that is to say, grades undesirable on account of phosphorus for certain foundry purposes—into steel. From this steel the very best rails that can be produced in the world are being made and engaged by the railroad companies months and months ahead of the limited capacity of the Ensley mills.

In that way Alabama has regained what was lost when the ironmasters decided that Pittsburg, in this age of steel, would, by making Bessemer pig out of Lake Superior ores more cheaply than any sort of pig capable of conversion into steel, continue to be Queen of the Iron World. It is today doubtful if any real expert believes that Alabama can fail to dominate the price of steel as she already dominates the price of foundry iron, i. e., so soon as enough steel plants can be constructed to make her steel output of sufficient consequence in tons to supply a larger fraction of the country's demand. As I have stated, the quality is fully admitted. So it is now merely a matter of quantity.

There will be built in Alabama during the next five years, solely in response to the law of supply and demand, and not speculatively, more furnaces than are now in existence in the State. And there will be built in that period steel plants enough to take all the iron that all these furnaces, the old ones and the new, can possibly produce. Of course, all the pig produced in Alabama will not go into steel, because the demand for iron for foundries, pipe works and rolling mills will be such that much of it can be sold more profitably than for conversion into steel. There will thus ultimately be two local iron markets to a great extent competing with each other. There is practically no limit to the demand that will soon develop for those grades of Alabama iron more suitable for other purposes than steel from existing plants in Alabama and from those that will certainly be built as soon as the labor can be got here and the material assembled. Few rolling mills outside of Alabama can compete with those located at the furnaces here. No pipe plant can compete with Alabama pipe plants in territory closer to Birmingham than any other center of iron production, and that means all the Gulf States, most of the South Atlantic States and most of what is known as the great Southwest, to say nothing of Cuba and the Latin-American republics. What is true of pipe is true of other heavy commodities made out of iron. The territory, therefore, that may be safely considered as tributary to Birmingham in respect to such articles as steel ingots, rods and rails, as well as all heavy iron products, is one of the richest in the world. And

when I say Birmingham I mean the cities of the region commonly called "the Birmingham district." Already Gadsden, with its steel plant and several new up-to-date furnaces, finished and building, lays claim to independent consideration as a center of productive activity, and somewhere between Gadsden and Chattanooga there will surely spring up another focal point in the production of iron and steel and the manufacture of commodities that may be made in and distributed from Alabama to better advantage than anywhere else.

The main bulwark of the abiding faith in Alabama's future held by those most intelligently familiar with local conditions is the immense quantity—I was about to say the immeasurable quantity—of raw material contained in the Alabama mineral belt, averaging less than 100 miles wide by about 150 long, stretching southwestwardly from the North Georgia line to the meridian of Tuscaloosa. You enter it from the east just southwest of Chattanooga on the Alabama Great Southern Railroad, which bisects it all the way to Tuscaloosa; you enter it from the north at Decatur on the Louisville & Nashville, and if you stay on the main line you will be in it till you pass Calera, and if you diverge from the Louisville & Nashville's main line to that company's various mineral branches you can travel through it during the best part of a week going 25 miles an hour all day long. The Southern enters it east of Anniston and cuts through it till the prairies toward Mississippi are reached.

Within this belt lie all things metallic that the nation will need for defense or offense; that a hundred million people will need for implements, machinery, structure, fuel, for a century to come if all other sources of supply were tomorrow engulfed into the unreachable bowels of the earth. Here lie all untouched contiguous masses of iron ore, coal and limestone sufficient to justify the most gigantic plants that the earth has yet upheld. Nowhere else has there been in sight such a sufficiency of supply. No other iron-making region can furnish so firm a foundation for extensive investment or give such a guaranty of continuously profitable operation. When all the higher grades of the Alabama ore shall be exhausted and the coals above water-level taken out, there will still be left enough low-level coal and enough lean ore to supply the continent for generations. When this reserve comes to be needed iron will be more costly, but the world will be prepared to pay the price, whatever it may be.

One of the reasons why some shortsighted investors have held aloof from mineral lands in Alabama has been their belief that since there was so much ore and so much coal, both must remain for a generation as drugs on the market. The truth is, as has just been shown, the very immensity of supply is what vouchsafes immensity of demand. If there were any danger of early exhaustion of ore and coal supply no big operations would be ventured. No man starts a big furnace or a big steel plant or a big rolling mill or pipe works without the assurance of sufficient raw material to keep it going indefinitely, and the greater this assurance the larger the number of men who will be found putting their money and skill into such enterprises. Therefore there is no danger of a glutted market for raw material entering into a world necessity which is doubling up every decade.

Apropos of this bearish sentiment, based on the theory of too much ore and coal ever to be needed, it may be remembered by those who have kept up with current discussion of Alabama conditions that there was some time ago a good deal of

bearish talk on the iron outlook, based on the theory that there was a shortage of brown ore, which is needed as a mixture with certain kinds of red (hematite) ore. For this latter notion there was much greater warrant than for the idea that red ore in Alabama was superabundant. Recently, however, it has been found that good iron can be made with little or no admixture of brown ore (limonite), and what is of greater significance, there have been recently proven to exist in the county of Talladega hundreds of millions of tons of what is called "gray ore," which completely fills the place of brown ore as a "mixture" and can be mined in some places and put on the cars for 40 cents a ton. During the current month between 200 and 300 tons a day of this "gray ore" have been used at the furnaces of the Alabama Consolidated Coal & Iron Co. at Gadsden and Ironaton, and it is averaging between 45 and 50 per cent. metallic iron and behaves well in the furnace, improving the grade of the pig where the mixture is half gray ore and half red (fossiliferous) ore from Red Mountain, near Gadsden and above Attalla. There are veins of this from 6 feet up to 27 feet now being mined, the latter by open-cut work on Talladatchee creek. The Louisville & Nashville officials have named the switch that reaches it from that railroad's main Mineral Branch, "Mesaba Switch."

As I am writing these general observations on mineral conditions and prospects in Alabama from the county of Talladega, I may be forgiven for saying that not only has this county given to Alabama this most remarkable ore "find" of recent years, the "gray ore," but it is fast blazing the way for the utilization of large quantities of the vast white and blue marble deposits of this section of the State. Near Sylacauga there has recently been installed by the Alabama White Marble Co., at a cost of \$150,000, a complete modern plant for quarrying and cutting the exquisitely fine-grained pure white marble that lies just under the surface of the ground, covered only by a few feet of clay at various places in this vicinity. This marble has been pronounced by experts to be superior to any in Italy, and is being shipped for interior use in some of the finest new buildings and residences now under construction in New York and other large cities. The company has been ready for business but a few months, but has orders a year ahead for its full present capacity, which is, however, being enlarged. There is a block of this marble in the Washington monument which the supervising architect refused to use on the ground that it was genuine Parian marble fraudulently represented as from Alabama. It took the testimony of both the Alabama senators and the congressman from this district to prove that it in truth and in fact came from a quarry in Alabama. That particular quarry was opened before the war, but the local demand for marble was so limited that it was abandoned. Here is furnished an instance of what will be met with all along the line—premature attempts to utilize resources. The effect of the failure that always follows whatever is undertaken before the world is ready for it has led the shortsighted to misjudge the merit of many things that are fairly bursting with profit to the man who will intelligently develop such of them as are required by the wants of this present 1906 civilization, tenfold more multifarious than were the wants of the civilization of the year 1890. What was worth while then may not be wanted now. What is despised and neglected now may be highly valued 10 years hence. Places which once were considered the best for this or that industry are being rapidly deserted. Other local-

ties which furnished the "horrible examples" of failure in 1890 under systems and methods then in vogue may be the shining lights of successful enterprise for 1906. I know of a coal seam in Alabama that was a dismal failure 15 years ago out of which, by the use of certain new machinery (so an eminent engineer tells me), there will be evolved the star operation of the coming year of grace!

The mineral district of Alabama is a virgin field. True, certain ore and coal seams have been thoroughly exploited, and their very names are as household words in and around Birmingham. But there are whole counties full of valuable substances which have so far not been "prospected," much less exploited or developed. It would be the making of a competence to a hundred young men with some knowledge of the rocks and of the correlation of strata to spend a year in the mountains of almost any county in the mineral belt with a pick and a shovel, or with only a hammer, a sample bag and enough money to pay for food and lodging wherever hunger and sunset might overtake him. There is much in the mineral kingdom of Alabama besides iron ore and coal, and there is a great deal of iron ore and coal concerning which the public has so far little or no accurate information. For my own part, I came to Alabama this trip intending to stay a week. I have stayed more than a month, and expect to stay all winter, if not longer.

Until about a year ago neither the financial nor the general public had any but the most hazy impressions concerning either the actual situation in or the potentialities of the mineral district of the State of Alabama. Even now there remains lamentable lack of public knowledge about this enormous national resource. The wide public discussion, especially in the New York dailies, incident to a contemplated "merger" early last spring of all the larger concerns producing iron, steel, coke and coal in Alabama threw much new light on what was then being done in this State and awoke many investors to a clearer realization of Alabama's possibilities. It was brought out in the newspaper comment and discussion and criticisms of the plan what might be done in Alabama by concentration and combination and by the abolition of unwise competition, and likewise what scientific economies would mean to this district, especially if accompanied by new and improved appliances and plants in keeping with the district's great natural advantages, due to the contiguity, quantity and quality of its raw material. Whatever else may not have resulted from this attempt to consolidate the big concerns of this district, the very criticisms that were aimed at the movement set some people to thinking about Alabama and set some to inquiring about Alabama and induced others to give a wider publicity to what they happened to know. In this way an unprecedented free advertisement of Alabama's advantages followed the movement of last spring.

I believe I am in a position to know better than the average individual what the stocks of these Alabama companies really stand for. I consider it safe to conclude that the new high prices paid for Tennessee Coal & Iron and other Alabama stocks are none too high when the real value of the properties owned by these companies is taken into intelligent consideration. I do not estimate this value by what the "going" plants are today worth, nor by what may be their present earning power, but by what the lands, containing contiguous iron ore, coal and limestone, are worth or may be made to produce. This feature of Alabama values has been largely if not entirely overlooked by the financial calcu-

lators in New York. The man or concern that owns or controls the raw material susceptible of conversion into iron and steel at a lower cost than elsewhere in the world is at last the true master of the situation, and can now get all the money for well-directed development that may be needed. Furnaces and steel mills are valueless unless the raw material is nearby. Present dividends constitute a most absurd criterion for gauging the real value of Alabama properties. One who does not know the ratio of increase in iron and coal consumption nor the importance of contiguity in the elements that enter into the production of these prime necessities, nor the advantage of an enormous tributary territory for commodities manufactured in any given center, can but make a pitiful exhibition of ignorance when giving out

opinions concerning the value of securities representing a hundred dollars in mineral wealth to one dollar in plants and appliances for earning present dividends.

It is easy to duplicate plants. It is fast becoming impossible to acquire desirably-located mineral lands in bodies large enough to justify modern operations. It is true that some good lands are still obtainable at prices much below value, but this is due to the fact that some local land-owners are still unnerved from the shock they received when the reaction of 1893 paralyzed all buying of real estate and broke up hundreds of pending negotiations. But the world has been moving and the wants of the world increasing and the uses of Alabama iron expanding year by year since the frost of 1893 blighted so many premature blooms of hope.

Southern Growth as Noted by a Close Observer.

By I. S. FIELD.

[Written for the Manufacturers' Record.]

The story of the growth of the South to its present status is so because it was so decreed. It is a story worth the writing and a story worth the reading because it concerns the realization of the hopes and plans of farsighted men. In the 20 years during which I have been identified with the MANUFACTURERS' RECORD I have seen the story unfold, and many of the small towns of 20 years ago are now cities of importance. They have given to and taken commercial toll from all the fair stretches of water that make in from the Atlantic and Pacific. I readily recall that 20 years ago the grass grew rank in the middle of some of the now most crowded streets of present up-to-date cities, and partridge shooting was excellent in what is now the best residential portions. All of this has come naturally, gradually, logically. It has come without boom and buncombe. Men have looked upon what the South had to offer, and have seen that it was good. Upon a sturdy stock the green shoots of a new growth have put forth normally and naturally without the employment of artificial devices.

It has been the voice of sane progress, and not the voice of the real-estate auctioneer, that has called people to share the goodly portion of a prosperous section of country.

Generally there are two questions only that every man need ask himself concerning a city, and they are of about equal importance: First, is the city a desirable one to live in? Second, is it a place in which to make a living? And it should be understood that by no means does every city that possesses the one requisite also possess the other. There are scores of cities in this country in which life is delightful for the men of independent means, but in which the man who has to make his way will find it difficult to go forward. There are scores of cities in which by applying himself to the grind a man may make money, but wherein the human current runs shallow and existence holds little more than the opportunity to make money. It were easy enough to name communities of both classes, but neither belong to the South. It is a good place to live in and a good place in which to make a living. The chance to make money and the chance to enjoy money are both there. The cities are good for residence and good for business.

When all is said, man does not live merely for the day's work. The day does not end with the click of the lock of store or office. On the contrary, for the normal man the pleasures of life really begin when the business cares of the day are ended and there is leisure for the enjoy-

ment of the finer things of life at the family fireside. The man of healthy body and mind makes money to live. He does not live to make money.

To the writer, who has traveled extensively through the South, there does not seem to be a section in the whole broad stretch of our country wherein the man who makes a moderate living can get more out of life than he can in the South. There is no section of the country that offers finer business opportunities to any man, whether he be laborer or capitalist, than the South. There is probably none that offers him the same opportunities to enjoy life to so full an extent upon a moderate income. It is an erroneous idea that the South is pleasant to live in during the winter and unbearable in the summer. The writer has frequently left Baltimore when the thermometer registered 90 degrees during the day in the shade, with hot, sultry nights, and has reached Charlotte, N. C., where the weather was cooler than in the North, and at sundown possibly six or eight degrees cooler, with refreshing breezes. Is it not just as important that a town should be a good place to live in as that it should be a good place to make a living in? Many of the cities of the South are the natural gateways for the commerce of the country's richest section. Its railroads tap the great mineral riches of the mountains and penetrate the section that lies between the Ohio, the Mississippi and the Great Lakes. The writer has just visited eight States in the South, and he has found the conditions brighter and more promising than ever before. After interviewing several mill-owners, manufacturers generally, retailers and financiers, I am persuaded that the Southern country is now in a more healthy and prosperous condition than it has ever been. I found every man optimistic; in fact, I did not find a single pessimist, as there is no room for such an individual. The factories of all descriptions, foundries and machine shops are generally working two forces in the 24 hours, a day force and a night shift, and several manufacturers informed me they had enough orders already booked to run this way for at least two and three months of the new year. A wonderful condition of affairs! I well remember the crude affairs many of the foundries, manufactories and machine shops were in the earlier days. Their work was confined mostly to repairs, and that of a local nature, but with the great march of progress you will now find modern up-to-date plants, with a capital invested ranging from \$50,000 to \$1,000,000, and the concerns doing business all over the United States. Several of them cover from 5

to 12 acres of ground, and are well equipped to do work of the smallest and most intricate character to that of the largest and most difficult design.

I was greatly interested in Wilmington, N. C., and in the surrounding country. This is the shipping point of the richest trucking section of the country, and its quick connection by water and rail with the country's greatest cities gives it unparalleled facilities for profiting thereby. Indeed, the trucking industry brings into that city something approximating many millions of dollars per year. Another thing that should receive particular emphasis is that the South is largely a young man's section. He has grown with the city's growth and has advanced with the city's advancement. The gates stand wide open for him. Every day new opportunities arise, new needs of the community clamor to be supplied. As a consequence there is no section in this country wherein young men are winning to the fore more rapidly than in the South, and no section offers to the young man of character, brains and energy more splendid opportunities.

The growth of the South has been phenomenal. It did not set up with a start and put off the raiment of country towns violently and in a moment. It rubbed its eyes deliberately, looked about carefully, took counsel with itself and stock of its assets and then set out upon a sane, sensible and conservative course of progress that has more than doubled its population in 20 years and has nearly doubled its property values since 1890. This wonderful progress made in the development of cities and industrial and financial enterprises is a tribute to the brain, brawn and energy of the native men connected with them. An erroneous idea is prevalent that the successful undertakings are owned and operated by outside men and capital. A banker of Boston, who was returning from a trip to California, said to me: "The healthy condition of affairs as witnessed by me during my travels in the South has been due no doubt to the thrift and enterprise of the people from my part of the country who have located there." It did not take me long to convince him that this was a fallacious idea, and when he asked for evidence to prove my argument against it it gave me pleasure to refer to such representative concerns as the Lombard Foundry, Machine and Boiler Works of Augusta, Ga.; the Mecklenburg Iron Works, Charlotte, N. C.; the J. S. Schofield's Sons Company of Macon, Ga.; Columbus Iron Works Co., Columbus, Ga.; R. D. Cole & Sons, Newnan, Ga.; William J. Oliver Manufacturing Co., Knoxville, Tenn.; Rome Foundry and Machine Works, Rome, Ga.; Morris Sherman Manufacturing Co., Chattanooga, Tenn.; Glover Locomotive and Machine Works, Marietta, Ga.; Virginia Bridge & Iron Co., Roanoke, Va.; Goldens Foundry & Machine Co., Columbus, Ga.; Peacock's Iron Works, Selma, Ala.; J. C. Steele & Sons, Statesville, N. C.; Park Manufacturing Co., Charlotte, N. C.; Richmond Electric Co., Richmond, Va.; the Glamorgan Pipe & Foundry Co., Lynchburg, Va.; McWayne Pipe Works, Lynchburg, Va.; Southern Engine and Boiler Works of Jackson, Tenn.; Corinth Boiler and Engine Works of Corinth, Miss.; Hardie-Tynes Foundry & Machine Co. of Birmingham, Ala.; Westbrook Foundry & Machine Co., Danville, Va.; Blakeslee Mfg. Co. of Birmingham, Ala., and several hundred others which began business in a very humble way, and today they have as fine plants as can be conceived of in any part of this country, covering, many of them, from 5 to 12 acres each, equipped with the most modern and up-to-date machinery, and all of this has been done by

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Southern men without any outside aid and nothing but home capital. They are generally close corporations, owned by the indefatigable Southern workers who originally started them. In conversation with Mr. George R. Lombard of the Lombard Foundry, Machine and Boiler Works of Augusta, Ga., the writer in going over that great plant commented about its development, which he was familiar with, and Mr. Lombard replied: "Yes, my father died and left me the legacy of this business, which I knew very little about, but by burning the midnight oil, toiling by day and giving thought to the developing of the business at night, and through the beneficent goodness of the Great Creator, who gave me health and strength, this business has been enlarged to its now present capacity." Judging from the great amount of work this foundry is doing, it will not be a great while before there will require to be other additions. One thing which has impressed the writer is the fact that even with all the cares and responsibilities of these great business men, they are not so absorbed in their business as to forget "from whom all these blessings come."

In the cities of today growth and development are absolutely dependent upon transportation facilities. The railroads are their best friends, and not, as many think, their enemies. A very striking thing to me has been the evolution of the railroads, especially the Southern Railway. I can well remember the old Richmond & Danville and kindred lines, known as the Piedmont Air Line, how crude and inefficient its service was, yet everybody seemed to be more or less satisfied with it. The best trains run on their main line were a horror to gaze upon, and the contemplation of a ride gave a man a chill. But the Southern Railway of today supplanted this, and what have we now but an up-to-date railroad in every particular and a system that will compare with any in the United States. It is justly called the Pennsylvania of the South, and it merits its name. The desire of the management seems to be to add all they can to the comfort and pleasure of its patrons. The magnificent Washington & Southwestern Limited, the Southern Palm Limited are simply up-to-date traveling hostels, and their branch lines are very much better than many of the best trains on some of the main lines of other railroads in this country. The writer well remembers the small railroad stations at many points along the main line of this road which resembled the narrow contracted suburban stations of an electric railway. But look at them now, for instance, at Charlotte, N. C.; Asheville, N. C.; Spartanburg, S. C.; Columbia, S. C., and Augusta, Ga., and so on down the main line of this railroad until you reach Atlanta, where you find that magnificent Union depot, which cost over \$1,000,000. Nothing in Baltimore to compare with it, and we can boast about having great trunk railroads passing through that city. This does not show a withholding or parsimonious spirit of the Southern Railway, at least. As it has prospered it has helped others to enjoy that prosperity. The other railroads in the South are keeping up with the march of progress.

In any community banking facilities afford a basis for the surest estimate of its stability and progress. In the South money can be had upon any reasonable security and for the inauguration of any sound and legitimate enterprise. The investor who locates in the South with a view to establishing new industries will secure from the banking institutions of the town any support that may be reasonably expected. The fact that the industries of

the town are so diversified enables the banks to afford accommodations with safety upon a smaller capital than banking institutions in other cities of equal population can afford. It is surprising to see how the banks have forged ahead. From small beginnings, occupying offices about 15x20 feet, they now own their own 10 and 14-story buildings, or buildings of one story with ample accommodations for their own use. This is a fact in many of the Southern cities; for instance, the Citizens' Bank of Norfolk, Va.; the National Bank of Commerce, Norfolk, Va.; the Bank of Richmond, Richmond, Va.,

which will soon move into its new big building; the Florida Bank & Trust Co. of Jacksonville, Fla.; the Georgia Railroad Bank of Augusta, Ga.; the Savannah Trust Co. of Savannah, Ga.; the Exchange Bank of Macon, Ga., and many others too numerous to mention.

The substantial development of the South has reached full headway, and I think it safe to say not half has been told and to predict that 1906 will be the banner year in the history of this chosen country. Last year was one of unprecedented prosperity. We may look forward to this year as one with brightest prospects for all.

Making Petroleum Records in Gulf-Coast Fields

[Special Correspondence Manufacturers' Record.]

Beaumont, Texas, December 23.

Texas will top the list of oil-producing States in the year 1905 with the greatest output of crude petroleum ever credited to a State in a single twelvemonth.

Conservative estimates, prepared in advance of the actual records and relied upon by the trade as being reasonably accurate, and, if anything, under the full total, make the 1905 output of Texas petroleum 30,619,988 barrels. This is 1,000,000 barrels in excess of the production of the California wells in 1904, which entitled the Pacific-coast State to rank first in that year. Texas was second in 1904, with 22,241,413 barrels. The 1905 figures show a clear gain of 8,378,575 barrels over the record of this State in 1904.

In 1901, the first year of oil development in Southeast Texas, when Spindletop gushers were pouring forth the flood of petroleum that was started when Capt. A. F. Lucas tapped the great pool south of Beaumont, the output of all the wells in the Lone Star State amounted to only 1,393,658 barrels—little more than one-seventh of the 1905 yield.

In 1902, when the use of oil as fuel in the Gulf coast country had become extensive, thus creating a market for Spindletop's product, the output of all Texas amounted to 18,083,658 barrels, of which the Beaumont field (Spindletop) produced 17,420,949 barrels. Spindletop was the topic of thousands of newspaper stories. It was described as the most productive oil pool ever discovered in America, and people rushed headlong into the hundreds of stock companies formed during the first two years, only to lose their money and their faith in Texas oil.

The year 1905 developed an oil field in Southeast Texas which has surpassed Spindletop's record for a twelve-months' output. Little has been said of this new district in the newspapers excepting the sensational stories of "earthquakes" and "volcanic upheavals" which were sent broadcast throughout the land early in the year when some severe gas blow-outs occurred in wells that were being drilled to test the territory. This field is known as Humble, and is situated in Harris county, Texas, 17 miles northeast of the city of Houston and about 70 miles west of Beaumont.

The first gusher was brought in at Humble on January 7, 1905, since which time the field is credited with a gross output of 18,171,161 barrels, being more than 700,000 barrels in excess of the biggest year in Spindletop's history. Production at Humble rose in June to the immense total of 3,462,207 barrels—115,000 barrels a day. Most of this oil came from an area less than 200 acres in extent. This is the greatest month's production which has been recorded in Texas. Added to the

output of the other Southeast Texas districts in June, it brought the grand total yield in this region—exclusive of the Jennings (La.) district—up to 4,501,320 barrels. This was at the rate of 150,000 barrels a day. Coming in such vast quantities, it was impossible to move all of the oil by rail and pipe line, and it was stored in earthen reservoirs hastily constructed with teams and scrapers. In July a fire at Humble destroyed 2,100,000 barrels of oil contained in 11 of these reservoirs or ground tanks. At one time, after this fire occurred, the surplus oil in storage at Humble amounted to more than 6,000,000 barrels.

On account of an imaginary State line, the oil fields of Southeast Texas and the oil fields of Southwest Louisiana are considered separately, while, as a matter of fact, they all belong to the same belt, produce practically the same grade of oil—most of it testing from 20 to 24 degrees gravity, Beaume—and to some extent supply the same market. When oil is cheap at Jennings, the most productive of the Louisiana districts, shipments are made from that point to supply Texas orders. Considerable Texas oil is also taken around by vessel from Port Arthur and Sabine to New Orleans and other Louisiana points. In computing the aggregate of supply and demand the Texas-Louisiana Gulf coast oil districts are regarded as one field.

Louisiana, like Texas, made very large gains in 1905 over the record of oil production in 1904. In 1902 the Jennings field produced 548,617 barrels, in 1903 947,771 barrels and in 1904 6,608,774 barrels, including a small yield at Welch, a few miles west of Jennings.

In 1905 the Jennings field is credited with a production of 11,103,630 barrels, indicating a net gain of 4,494,856 barrels. Until May, 1905, the facilities for moving oil from Jennings to market consisted of one railroad, the Southern Pacific. The congestion caused by the moving of from 500,000 to 600,000 barrels a month by tank car over the one line led the Evangelical Oil Co. to lay a pipe line to the Atchafalaya river, 60 miles distant, and Jennings oil is now piped to that stream and loaded on barges which convey it to the Mississippi river at Plaquemine, whence it is delivered to consumers along the lower Mississippi. This territory uses as fuel each year 2,500,000 barrels of crude oil. The accumulation of surplus oil at Jennings at the close of 1904 amounted to 3,670,000 barrels, and to this has been added this year 3,548,702 barrels, making a gross total of 7,218,702 barrels, some of which must be charged off on account of waste and evaporation, amounting in some instances to 15 or 20 per cent. of the total where oil is stored in ground reservoirs such as are used at Jennings and Humble.

The combined output of the Texas-Louisiana Gulf coast districts in 1905 was 41,

123,618 barrels, which is more than one-third of the gross production of petroleum in the United States in 1904, recorded in F. H. Oliphant's government report as 120,733,421 barrels. This is a magnificent showing for an oil region not yet in its fifth year.

In 1891 Pennsylvania and New York, which are considered as one oil country in the statistical tables contained in the government reports, produced 33,009,236 barrels, the greatest yield ever recorded up to that time from one region. The Texas-Louisiana Gulf coast districts, comprising less than 3000 acres of developed territory, have exceeded the Pennsylvania-New York high-production record by 8,000,000 barrels.

The combined yield of the Texas-Louisiana Gulf coast fields in 1904 was 28,128,940 barrels, against 41,123,618 barrels in 1905, an increase of 12,994,678 barrels. At the close of 1904 the stocks of surplus oil in storage in the Southeast Texas districts was estimated at 13,352,920 barrels, and at Jennings 3,670,000 barrels, or a total of 17,022,920 barrels.

The movement of Texas-Louisiana oil—excluding Corsicana and other light-oil districts, and also Matagorda—consisted of 14,161,493 barrels by tank cars from rail shipping points, of which 2,324,565 barrels were unloaded into tanks or pipe lines and reshipped, therefore not being figured as consumption; 6,593,250 barrels by vessel from Port Arthur and Sabine; 1,211,648 barrels delivered to fuel users by way of the Jennings pipe line to the Atchafalaya and barges to the Mississippi river; 7,000,000 barrels (estimated) used by the Southeast Texas refineries in the manufacture of illuminating oil, gasoline, gas oil, lubricating oils, asphalt, etc., and 740,000 barrels consumed on the fields for fuel. This indicates a total gross movement of 29,706,400 barrels. Deducting the oil shipped by tank car reloaded, 2,324,835 barrels, leaves a net total movement and consumption amounting to 27,371,565 barrels. This amount taken from gross production, 41,123,618 barrels, indicates an apparent surplus of 13,751,783 barrels. It is estimated that the loss on gross production, resulting from storing the oil in open earthen reservoirs, is not less than 5 per cent. This would be about 2,000,000 barrels. Adding the loss of 2,250,000 barrels by fire at Humble and Sour Lake, makes the total to be deducted 4,250,000 barrels. This amount taken from the gross surplus leaves 9,501,783 as the net surplus. The amount to be charged to waste and evaporation will probably prove to be considerably more than the figures here given. The 1905 surplus, as indicated, with the surplus for 1904, would make it appear that the amount of oil in storage at this time is above 26,000,000 barrels, while the actual stocks are probably nearer 24,000,000 barrels.

Southeast Texas refineries are running 20,000 barrels a day of Texas-Louisiana crude, and the refineries of the Sun Company at Marcus Hook, Pa., and the Standard Oil Co. at Bayonne, N. J., are using another 10,000 barrels a day. The principal products of Southeast Texas crude are kerosene, gas oil and lubricating oils. An excellent grade of asphalt for all purposes is manufactured from the Gulf coast crude, and the lubricating oil that is manufactured from this crude is finding a market in both America and Europe. The Gulf Refining Co., operating the largest plant in Southeast Texas, located at Port Arthur, is running nearly 400,000 barrels of crude oil a month and is shipping kerosene and lubricating oil in shiploads to Europe. This same company and the Texas Company, operating a refinery at Port Arthur with capacity of 100,000 barrels of crude oil a month, is shipping

its manufactured products to the North Atlantic coast. The Gulf Company is distributing Texas kerosene and lubricating oils throughout the cities of the East—Boston, New York and Pittsburg. Tank wagons are on the streets of Pittsburg, the very stronghold of the Pennsylvania oil country, delivering Southeast Texas kerosene to dealers.

All of the refineries south of Beaumont are supplying kerosene and gasoline to the Texas market. Other Southern States are large consumers of Texas refinery products. Gradually the market is expanding, and in a few years the entire Middle West may be supplied with the refined oils and lubricating oils manufactured in the Texas and Kansas refineries.

The value of the oil produced in Texas and Louisiana in 1905, figured on the very low basis of 30 cents a barrel at the well, exceeds \$12,000,000.

Prices today are firmer than they have been before in the past 12 months. Spindletop oil is bringing 52 and 55 cents at the wells, Sour Lake is bringing 45 and 46 cents a barrel at the wells, Humble is bringing 40 and 42 cents at the wells, and the light oil of Corsicana is quoted at 89 cents.

The following tables show the production and movement of oil in the Southwestern fields in 1905 in barrels of 42 gallons each:

Production of the Jennings (La.) Oil Field in 1905.

January.....	1,318,500
February.....	1,082,000
March.....	1,103,600
April.....	792,000
May.....	978,050
June.....	1,098,000
July.....	925,970
August.....	930,000
September.....	698,700
October.....	805,210
November.....	746,000
December.....	682,000

Total.....	11,103,630
Production in 1904.....	6,908,774

Increase in 1905 compared with 1904 4,494,856

Movement and Consumption of Jennings Crude Oil in 1905.

Shipped by tank car to fuel consumers and in trainload lots to pipe-line companies at Beaumont and Sabine.....	6,333,249
Delivered through Evangeline pipe line and barges to the Mississippi river.....	1,211,518
Field consumption (fuel for boilers, etc.), estimated.....	110,000
Total consumption.....	7,554,888

The foregoing total, 7,554,888 barrels, deducted from the production, 11,103,630 barrels, indicates that the surplus above demands at Jennings in 1905 was 3,548,742 barrels. Of the oil shipped from Jennings by rail, about 1,000,000 barrels went to Beaumont and Sabine in trainload lots and was unloaded into pipe lines and run in the refineries or reshipped from one of the Gulf ports, appearing, in the latter case, as shipments of Texas oil. As this oil appears twice in the record of shipments, allowance is made for it in figuring the grand total of consumption of Texas-Louisiana crude oil in the tables below.

Stocks of oil in storage at Jennings on December 31, 1904, were figured at 3,670,000 barrels. Adding the surplus for 1905, amounting to 3,548,702 barrels, gives a gross total of 7,218,702 barrels, representing the amount of oil that has gone into storage in the Jennings field in the last two years.

Production of Oil in Southeast Texas in 1905.

January.....	1,309,727
February.....	1,791,840
March.....	2,859,180
April.....	2,726,790
May.....	3,516,330
June.....	4,501,320
July.....	3,613,241
August.....	2,572,500
September.....	2,123,000
October.....	1,670,600
November.....	1,577,600
December.....	1,556,950

Total..... 30,019,988

Production of all Southeast Texas districts (Baton, Saratoga, Sour Lake, Spindletop) in 1904..... 21,520,175

Increase in 1905 compared with 1904 8,499,813

The production by districts was: Hum-

ble, 18,171,161; Dayton, 71,900; Batson, 3,891,210; Saratoga, 2,930,250; Sour Lake, 3,479,965, and Spindletop, 1,475,472.

Southeast Texas production in 1905, 30,019,988 other Texas production in 1905 (including Corsicana, Powell, Henrietta and Matagorda), estimated..... 600,000

Gross Texas oil production in 1905, 30,619,988 Gross Texas oil production in 1904..... 22,241,413

Increase in 1905 compared with 1904 8,378,575

Consumption of Southeast Texas Crude Oil in 1905.

Shipped by vessel from Port Arthur and Sabine.....	6,593,269
Shipped by tank car to fuel consumers.....	7,965,253
Run by Southeast Texas refineries, estimated.....	7,000,000
Field consumption (fuel for boilers, etc.), estimated.....	600,000
Total consumption.....	22,151,512

The foregoing total, 22,151,512 barrels, deducted from the production, 30,019,988 barrels, indicates that the surplus of output above demands in Southeast Texas in 1905 was 7,868,476 barrels, which was put into storage.

Combined Production of the Texas-Louisiana Oil Fields in 1905.

January.....	3,058,227
February.....	2,876,840
March.....	3,762,780
April.....	3,518,700
May.....	4,491,380
June.....	5,509,320
July.....	4,539,211
August.....	3,503,500
September.....	2,821,700
October.....	2,475,810
November.....	2,324,200
December.....	2,238,950

Total..... 41,123,618

Combined production of the Texas-Louisiana oil fields in 1904 (including Baton, Saratoga, Sour Lake, Spindletop and Jennings)..... 28,128,940

Increase in 1905 compared with 1904 12,995,678

Movement and Consumption of Texas-Louisiana Oil in 1905.

All tank-car shipments.....	14,161,493
All port shipments.....	6,593,259
Delivered to the Mississippi river.....	1,211,518

FOR HONEST WORK BY THE SOUTH.

By WM. G. COCHRANE, Vice-Pres. and Genl. Agent Tombigbee Valley Railroad Co.

[Written for the Manufacturers' Record.]

I have been thinking a good deal lately about the general condition of things, and have felt tempted to try and express my thoughts in writing. The principal thoughts that worry me most are two:

1. I am thinking of how to keep the country places and farming interest up even with the growth of the larger cities.

It seems to me that the manufacturing and mercantile interests are growing too fast in proportion to the producing or farming classes. Our country needs more tillers of the soil now. It is time for some of our young people to realize that all substantial wealth is dependent upon the products of the earth, mainly the farm. In the South there is a monopoly of cotton. No section in the entire world has a more commanding position as to producing wealth than the Cotton States of the South. It was this that has enabled the Southern man to withstand all the drain upon his part of the country since the war. The cotton crop has been the foundation upon which we have builded. No matter how politics oppressed us, and no matter how the great capitalists planned against us, they have always been compelled to send their money South after our cotton. It has taken 40 years, but today the banks of the South are full of cotton money; in fact, the cotton crop of the South is worth more per annum than any other single production, not excepting gold and silver and copper-mining output, and the blessing of it is that it permeates the entire population. Every family has a "mine" of wealth in its cotton field, and it gets its share of the vast sum of money that comes after the bales of cotton. The small farmer who raises one to five bales of cotton feels pride in having produced his own income without having to serve as a hireling to the richer man or corporation. It

Run by Southeast Texas refineries, estimated..... 7,000,000 Field consumption..... 740,000

Total movement and consumption..... 29,706,400 Less 1,000,000 barrels of oil, appearing in the record of rail shipments from Jennings, which went in trainload lots to Beaumont and Sabine for refining or reshipment, and 124,565 barrels of oil which went in trainloads to Sabine from Humble..... 1,124,565

Total net movement and consumption..... 28,581,835

Gross production..... 41,123,618 Net movement and consumption..... 28,581,835

Apparent surplus..... 12,541,783

All production figures are gross, and no allowance is made in computing the totals for waste and evaporation. Inasmuch as nearly all of the output of the Humble and Jennings fields—constituting about three-fourths of the entire Texas-Louisiana production—was stored for a time in open earthen reservoirs (8,000,000 barrels of the 1905 output of these two fields is still in tankage of this character), the loss through waste and evaporation on this oil has been considerable, running as high in some instances as 20 per cent.

Oil consumed by fire at Humble and Sour Lake in July, 1905, must be deducted from the apparent surplus. The amount lost was 2,250,000. Not less than 2,000,000 barrels must be charged off to waste and evaporation.

Production figures for 1905 in the foregoing tables are from carefully-prepared estimates made in advance of the completed records. The shipments are computed from the records, and are substantially correct. The data as to previous years is taken from the government reports compiled by F. H. Oliphant of Oil City, Pa. HOLLAND S. REAVIS.

to do one-half the work that is to be done. The South needs good laboring men and women badly. No man can make a mistake by coming into Alabama, Mississippi or Louisiana at this time. Along this line of getting more population I have a thought, too, and it is that the best way to get a good permanent class of people to live here is to try and bring young children and place them with good Southern families and let them grow up as one of the family. They will thus learn to love the country and will marry and settle in the country. The cities are crowded with many orphan girls and boys. If these could be distributed in the South and grow up they would soon add greatly to the labor on farms and be a blessing to themselves as well as to the country.

Healing Springs, Ala.

Steel Plant for West Virginia.

The industrial news of the MANUFACTURERS' RECORD referred recently to a report that the Follansbee Bros. Company of Pittsburg, Pa., was to build a steel-plant addition to its black-plate plant at Follansbee, W. Va. It is now known that the company has definitely decided upon this important extension to its works at Follansbee, and brief details are given in a telegram from the MANUFACTURERS' RECORD from the Follansbee Bros. Company. It is announced that the company will build three 15-ton basic open-hearth furnaces with a daily capacity of from 100 to 150 tons, and the bar mill will be thoroughly modern in every respect, containing large hammer, electric shears, electric cranes and other mechanical equipment for the production of the highest-grade tinplate and sheets for specialty requirements. The additional buildings will include a 400x60-foot structure and a 40-foot addition. The Follansbee Bros. Company gives more details in a letter to the MANUFACTURERS' RECORD as follows:

"We have had in operation for over a year our new eight-mill tinplate and sheet plant, producing about 100 tons per day, employing nearly 700 hands and operating more particularly along the specialty basis of the production of highest qualities bright charcoal tinplate, heavy-coated terne plates and special finished steel sheets, the latter more particularly in stamping qualities. With the very best of associations for supplies of raw material in the shape of tinplate and sheet bars the progress of our business has been such along specialty lines that we have felt it desirable we should also control the manufacture of our own raw material, and for that reason, as indicated in our telegram to you, we are now starting with the erection of our open-hearth steel plant. Same will be along rather different lines than ordinary, in that most of the works now erected have for their prime object the production of the largest tonnage at the lowest cost. We will produce a tonnage necessary for our own requirements running from about 100 to 150 tons daily, but instead of erecting open-hearth furnaces of 50 tons or greater capacity we will make ours 15 tons. This is along the line of best practice in England, Wales and Germany, where quality is the prime desideratum. In addition we will install a large power hammer, to be utilized in hammering the steel ingots, in this respect also working along the lines of improved quality. The enlargement of our plant includes a bar mill complete, hydraulic shears, electric cranes, etc., all to be of the best equipment, the entire plant being installed with the idea of production of highest possible quality along the line of specialty requirements. These additions will be immediately adjoining and in connection with our present plant, so same will represent one compact works."

THE FUTURE IN THE APPALACHIAN SOUTH.

[Special Correspondence Manufacturers' Record.]

Charleston, W. Va., January 1.

Asked by the editor of the MANUFACTURERS' RECORD to draw a picture of the development that the coming years will bring to the great Appalachian section of the Virginias, Kentucky, Tennessee and Alabama, I must confess that I peer into the future as one "lost in wonder and amaze." The realities of the present are so numerous and the assurances given by the forces now at work are so gigantic that a conservative forecaster may well hesitate to record his conclusions as to what, for this section, the future contains. Taking the developments now under way, and giving due regard to the magnitude and importance of present influences affecting railroad construction, financial investment and industrial enterprise, it is genuinely impossible to escape the conviction that the next five years will see a greater onrush in the South than the past 15 years have shown. In addition it seems certain that but a mere beginning has just now been made, and that there is justification, in what the ensuing few years will witness, for a belief that this wonderfully rich mineral section of the South is to become the theater of so vast an activity and development as has probably never before been equalled in any other section of the United States, if, indeed, in the history of all the world.

Here, in much of the territory of this section, there is coal of such quantities and of so high a grade as has already made it one of the most important coal-producing regions in the world, and yet, in comparison with what remains in the ground, hardly more than openings have yet been made. Here, in every one of the five States named, there are millions of acres of coals, steam, domestic and coking, unsurpassed in quality by the coals of any other section whatsoever, and sufficient in themselves to supply all the needs of the world for centuries to come.

Here are deposits of iron ore so vast that experts have declared the South will be mining iron when even the Mesaba range shall have become a barren field. And here are forest growths so great that while supporting ever-increasing wood-working industries in the South, their timber likewise finds a market in nearly every quarter of the globe.

Were the section to merely market the raw materials in which it abounds there would be prosperity of a marvelous sort—vast beyond the power of calculation; for in the coals of West Virginia alone there is a wealth of \$60,000,000,000 at the lowest estimate that may be made, and while this is the richest in coal resources of any of the States in the group, or the country either, for that matter, yet there are enormous fields of similar coal in Kentucky as yet wholly untouched, while Southwest Virginia and Tennessee, and more especially Alabama, contain such areas of high-grade coal as would make the Appalachian section a rich and world-famous coal field were West Virginia wholly eliminated from consideration. To the coal add the iron ore and the timber, and on top of these the oil and gas that exist in large areas of the section, and there are provided in these items alone wealth-producing elements sufficient to make an entire nation rich.

While in the earlier stages of development in this section there were greater activities along the lines of marketing raw materials and crude forms of products than in the production of finished articles and in refined manufactures, and to a great extent this relation still exists, there has grown up in recent years so remark-

able a development of varied industries as to inject new conditions into the section and to radically change the entire situation, while promising a development so vastly greater that what is seen today must be taken as merely a forerunner of conditions that are to be. At the present time West Virginia is shipping away all but a meager per cent. of her coal, either as it comes from the mine or in the shape of coke, and to some extent this is true throughout the Appalachian range where coal-mining operations are carried on at all. The greatest utilization of these fuel resources is found at the extreme ends of the range, where the iron and steel industries at Wheeling, on the one hand, and at Birmingham, on the other, have not only reached a present-day development of marked proportions, but where forces are now at work for a vastly greater expansion in those lines. The operations of John W. Gates and his associates at Birmingham promise an epoch-making progression in the iron and steel production of the section, and other forces of great power are working in the same direction. Railroads are being extended into the ironore fields of Southwest Virginia, idle blast furnaces in that section are to be started up, and throughout the entire range there are promises of an activity by great and small factors alike which will carry the iron production of the South far beyond any figures hitherto approached and promising to make of the South the center of the iron and steel industry of the world.

Outside of Birmingham and Wheeling, in each of which places many millions of new capital have just been invested in iron and steel properties, there are developments in interior points which are important in themselves and for the promise they contain of similar activities the whole region through. Thus there are steel plants at Parkersburg, both well established and of recent location; there is at Charleston the largest axe factory in the world, and there is talk there of other iron and steel-working plants and of blast furnaces and steel mills to supply the materials required; there are iron and steel-working industries at Chattanooga and at other points in the section named, besides those at Birmingham, where there is an increasing utilization of pig and billet for the manufacture of many forms of the marketable finished products of iron and steel. All through this section, from the Pennsylvania line to the foothills in Alabama, there are industries in these lines to be found side by side in exemplification of the theories of both Edward Atkinson and Andrew Carnegie. From a talk I had with Mr. Atkinson a year or more ago, views which were repeated in a letter to the MANUFACTURERS' RECORD just before his recent death, it appears that his idea of general and desirable prosperity was to have innumerable small shops where artificers wrought with their hands—"that is real 'man'-ufacture," said he; while Andrew Carnegie's theory and practice is to bring together gigantic aggregations of mammoth units, making big centers, where colossal machines turn out enormous quantities of products. While small shops are being established all over this section, some of which are the indubitable foundations on which structures of great proportions will come to be reared, there are also enterprises of the giant kind already established or under way, and plans are on foot for still greater things, till there would seem to be now in sight a realization of the visions of the seers and prophets who from old have proclaimed a coming development for the South in the

making of iron and steel that would make it the busiest and greatest industrial center the world has ever known.

Throughout a large portion of this section, and most especially in West Virginia, there is a present development of oil and gas which is pouring wealth into the hands of individuals and communities and laying the foundations for industrial greatness that never will depart. Though oil stores will all be gone and the last flow of gas some day be seen, yet in such fields as West Virginia's the end is decades in the future—a quarter of a century, perhaps—and meanwhile the enormous economical advantage of fuel gas will attract to this State manufactories of the largest sort. The Kelly Axe Factory, with its saving of \$50,000 a year in fuel bill, is an illustration which can hardly be overemphasized as showing the present developments and future possibilities. All great factories have been built up from small beginnings somewhere. Development is the outgrowth of experience. Often, if not always, it happens that when greatness has been reached the make-up of the old plant, with its successive additions and occasional makeshifts, suggests the possibilities of vastly-improved facilities could an entirely new plant be constructed. This natural-gas section offers unparalleled opportunities for manufacturers who have reached that stage. The saving in fuel bills, where fuel is an important item of expense, would pay all costs of removal and reconstruction within the first few years, leaving a long term for increased dividends, improvements, enlargements and surplus, and after that there is coal that may be converted into producer gas for ages. That these conditions will bring about the relocation of many big industrial plants in this section there is not the slightest room for doubt, and the coal wealth of the Appalachian range, even in districts where no natural gas occurs, will attract other great industries or foster their establishment and growth.

There are wonderful developments of water-power in many portions of this Piedmont range. Great industrial centers will undoubtedly be built up around these dams and generators. They will furnish power forever—"as long as grass grows or water runs," to use the picturesque phrase recorded in one of the government treaties with American Indians—and there may come a time when Nicola Tesla's gropings for an invisible power in the elements above may reach a realization through some future Edisonian wizard of the air; but for present purposes, and in the light of the knowledge of today, coal is king of the industrial world, and it is the 50,000,000 acres or so of coal lands in the Appalachian belt that furnish the basis for a prophecy of industrial greatness all through the region roundabout such as will bring to this section a degree of development and prosperity that will be the marvel of the age.

Palpably it is the coal and the iron of this region that have attracted the great financiers and the sovereigns of the railroad world to this portion of the South to such conspicuous extent as has recently been seen. Coal has induced that great magnate of Standard Oil, Henry H. Rogers himself, to undertake the construction of the fifty-million-dollar Deepwater-Tide-water Railroad from the lakes to the sea through the very heart of the West Virginia coal fields. Thomas F. Ryan, who now looms exceeding large in the stellar Wall-Street map; James A. Blair, who succeeded to much of the wealth and the prestige of his uncle, the late railroad builder and many times millionaire, John I. Blair; T. Jefferson Cooledge of former Santa Fe Railroad connections and with vastly influential Boston affiliations, are

others who are building railroads and buying coal lands in this mountain section. The important McHarg interests are investing added millions in railroad, coal and iron properties in this region; Eugene Zimmerman and associates are figuring on the construction of a new railroad from his Ohio river bridge near Ashland, now building, through the Elkhorn coal fields of Kentucky to a connection with the Ryan-Blair-Cooledge road either at Pound Gap or the Breaks of the Big Sandy, and there are numbers of lesser projects on their feet, nearing completion or under process of financing that bespeak the most substantial recognition and appreciation of the resources and development of this section. Without going into an enumeration of all the projects affecting the district, it is worthy of mention that the final plans of Gould in West Virginia are not yet announced, but must reveal important bearings when promulgated; that the recently-completed Coal & Coke road of Henry G. Davis and Stephen B. Elkins is one of the most important short lines of recent construction; that the Southern Railroad and the Louisville & Nashville have in hand a number of extensions and branches, all intended to reach and further the developments under way in the mineral regions of the Appalachian section.

While coal and iron are the dominating factors in the vast investments and operations of these world-famous forces, the timber resources of the section are attracting a degree of attention that would be considered phenomenal if not dwarfed to so large an extent by the magnitude of the operations in coal and iron properties. Here is the greatest hardwood timber section of America today, and in its development some of the most important factors in that line are found engaged. Not only is there an ever-increasing number of saw-mills and planing mills being established, but furniture factories and other wood-working plants are growing up everywhere in the region, and capitalists from many portions of the East and North are coming into the section for investment and development. In not a few instances practical forestry is being undertaken by these forces, with the intent that this region may not become a cut-over waste, as some timbered sections of the country have been rendered, but that this may forever be the great storehouse for important timber supplies. Here, too, in addition to the production of timber that enters into ordinary commerce, there are to be found a number of very great wood-pulp mills utilizing the woods that are adapted to such purposes, with the result that a vastly diversified use of the woods of this favored section is already to be seen.

These are the principal factors entering into the great development now under way in the Appalachian range. Untold millions are being poured into the section from all sides. In West Virginia alone there have been \$100,000,000 invested within three years in coal, timber and railroad developments themselves, not counting the investments that definite projects in hand will yet require, and this vast sum must be duplicated many times in the operations that other States in this section can show. The result is seen in a buoyancy in the spirits of the people, in a prosperity that everywhere abounds, and in the growth in cities and in banking strength that "phenomenal" alone describes. All the South, all the nation and much of the entire world is witnessing a degree of development and prosperity such as has never before been seen; but there is a magnitude and a tremendous onrush to the developments in the mineral and timber region here called the Appalachian range, and there is so well-nigh an illim-

itable vastness in the promises the future contains, that no picture of coming greatness seems overdrawn to him who grasps its full significance, nor does any section

of the globe appear to hold assurances of a more gigantic growth or of a development more truly magnificent.

ALBERT PHENIX.

THE IRON INDUSTRY IN 1905-1906.

By EDWARD H. SANBORN.

[Written for the Manufacturers' Record.]

Conditions in the iron industry at the close of 1905 and the beginning of 1906 are such as have never been witnessed before. A year of steadily-increasing production has culminated in a rate of output that has exceeded the most sanguine predictions. With a demand for all forms of iron and steel products that taxes productive capacity to its utmost, and with consumers covering their requirements far into the future, there seems to be promise of increased rather than diminished activity during the year now beginning. While these conditions may be considered as phenomenal, judging from years that have passed, they arise from natural business causes, and differ only in kind rather than in degree from conditions which present themselves in many other great productive industries.

Coal, iron and transportation, which are the three greatest elements in the industrial life of the nation, all tell the same story of extraordinary strain to meet the demands upon them. And labor, too, is as urgently in demand as any of the materials of industry. Truly all these factors tell of industrial activity and prosperity in excess of the furthest limits heretofore reached.

The year 1903, which was thought to be the high-water period in the iron industry, showed an output of 18,000,252 gross tons, but the production in 1905 was nearly 5,000,000 tons in excess of that amount, or nearly 23,000,000 tons. In 1898 the United States produced only 11,772,934 tons, so that in seven years the output has nearly doubled.

In the first six months of 1905 the production of pig-iron as ascertained by the American Iron and Steel Association was 11,163,175 tons. During the last half of the year the output, as compiled by the *Iron Age*, with an estimate for December, was as follows:

	Gross tons.
July.....	1,741,955
August.....	1,812,573
September.....	1,899,500
October.....	2,053,174
November.....	2,014,921
December.....	2,085,000
	11,637,123
Add first six months.....	11,163,175
Total for the year.....	22,800,298

The productive capacity in December was at the rate of about 25,000,000 tons per year.

It requires a keen and imaginative mind to grasp the magnitude and significance of these figures. Their meaning is most quickly grasped by showing the successive steps in their attainment. Since the 10,000,000-ton mark was passed the growth of the pig-iron output has been as follows:

	Gross tons.
1898.....	11,772,934
1899.....	12,620,501
1900.....	13,789,242
1901.....	15,878,354
1902.....	17,821,297
1903.....	18,000,252
1904.....	16,497,033
1905, about.....	22,800,000

With an increase of more than 6,000,000 tons in the output during the past year, the supply has been insufficient to meet the demand, and the importation of foreign pig-iron and rolled-steel products, which reached such large proportions in 1902 and 1903, have been resumed. In the first nine months of 1905 the imports of pig-iron amounted to 153,051 tons, as compared with 61,220 tons in 1904; but these figures do not represent the extent

to which foreign sources of supply are being drawn upon, for large contracts for pig-iron and structural material have gone to foreign makers during the closing months of the year. While the imports in 1905 have been far below the 619,354 tons of pig-iron imported in 1902 and the 539,574 tons in 1903, it is probable that the first half of 1906 will show heavy deliveries of foreign material.

The most astonishing feature of the iron industry in 1905 has been the tremendous activity in the Lake Superior iron-ore region. From an output of 21,843,743 tons in 1904 there was a jump to about 31,100,000 tons in 1905, which corresponds approximately to the increase in pig-iron production in the entire country.

The demand for ore at the close of the season was so great that an advance of 50 cents per ton was readily paid, and before the end of the year practically all of the output of the independent mines was purchased for the coming year at this advance. This promises a certain advance in pig-iron, and, what is of more importance, it also shows that the ore supply is going to be the critical point in the iron industry this year.

Without doubt there will be a large increase in the production of iron ore this year over the tremendous output of 1904, and those who do not own or control their own mines may have difficulty in filling their increased requirements. The demand for ore is calculated to stimulate the development of properties now producing and also the opening of new mines. An impetus will be given to the search for new ore bodies, and already there are evidences of great activity in this direction.

Any large increase in the output of iron ore this year will come from the expansion of existing operations rather than the opening of any new fields. Modern mining methods and efficient machinery make possible the movement of ore in quantities and with economy that were unattainable even a few years ago, and recent performances in the Mesaba field make the achievements of the older mines look insignificant. The more elastic standards which have resulted from the great demand for ore contribute also to the making of high records in output. In times like these, when any kind of ore is in demand, buyers are less critical, and much ore which formerly would have been accepted only under protest now finds a ready market.

It would be unwise to say that the ore resources of the United States have been fully determined and that no other great deposits will be discovered; but it is certain that each year the unknown territory is narrowed and the ore supply becomes a more and more vital problem in the iron industry. Such demand as now prevails tends to enhance the value of properties that have been passed by or neglected in less strenuous times, and leaner but easily-mined ores are receiving more and more attention.

These conditions tend to increase interest in the South as a region for making iron at low cost. That the development of Southern iron-ore resources has not kept pace with the extraordinary output of the Lake Superior region should be more a matter of satisfaction than of regret. While the Lake Superior region is

dispensing its wealth with marvelous prodigality, the South is husbanding its resources and awaiting the time when necessity will make larger demands upon its ore bodies than is practicable under conditions now prevailing.

The exhaustion of the Lake Superior iron-ore region is too far in the future to cause any anxiety to the present generation, but nevertheless the approach to a definite determination of the limits of the Lake Superior region tends to direct attention more and more to other fields. Each passing year adds to the value of Southern ore properties and brings the day of their broad development nearer and nearer. The statistical position of the South in the iron industry is less significant than the increasing appreciation of its resources and the gradual focusing of attention upon them. What has been done in the South, as measured in tons of pig-iron, is less significant than the possibilities which have presented themselves to those men of foresight who perceive the trend of affairs.

Every man who grasps the present situation of the iron industry wants to know how long this great activity will continue; but the prophet is yet to arise who can answer this question. Any man who studies the conditions may see, however,

that every indication points to the continuance rather than to the disappearance of activity and prosperity. High prices always threaten destruction to good times. The tendency to make the most of the demand for any product is liable, unless restrained, to cause a destructive reaction.

It is necessary to go back only to 1903 to see how abnormally high prices for iron and steel curtailed the demand and started everything on the down track. Bessemer pig-iron at \$22 or \$23 per ton and billets at \$30 or more indicate that the pressure is too great and something is likely to give way. It is reassuring, however, to note that even the enormous demand of the past few months has not carried prices anywhere near the level of two and three years ago. Controlling interests in the iron and steel industry seem determined to preserve and prolong the good conditions now prevailing by opposing the strong tendency towards higher prices.

So long as the stability of prices can be maintained and speculative movements restrained the present remarkable activity in the iron industry seems likely to continue, for all the underlying conditions which affect all branches of business are sound, and from every department of industry there comes an insatiable demand for every form of iron and steel.

WHAT RAILROADS ARE DOING.

A Glance at Important Construction Done During the Past Year and What Is Assured for the Future.

Railroad construction during the past year in the South has been notable in several ways, as was shown by the figures presented in the annual review in the last issue of the *MANUFACTURERS' RECORD*. The outlook for this year is also impressive, for there are many important pieces of work under way and in prospect. The efforts of various lines to reach tidewater ports continues unabated both east and west of the Blue Ridge. Much has been accomplished toward this end, but that which will be done in the future seems likely to be as great if not greater than what has been accomplished in the past.

Among the important pieces of work finished during 1905 are the Chesapeake & Ohio Railway's Big Sandy extension to Elkhorn City, Ky.; the Coal & Coke Railway, between Elkins, W. Va., and Charleston, W. Va.; the Mobile, Jackson & Kansas City Railway, between Middleton, Tenn., and Mobile, Ala.; the White River extension of the Missouri Pacific Railway and the water-grade line of the Missouri Pacific along the west bank of the Mississippi river to permit of train service directly between Memphis and New Orleans. This latter line will soon be further improved by a cut-off between Marianna, Ark., and Memphis to avoid the detour now made via Wynne, Ark.

But the work that is begun and is now proceeding embodies many great plans, one of the most conspicuous being that of the Tidewater Railway, between Norfolk, Va., and Deepwater, W. Va. Contracts have recently been let covering its entire construction plans in the State of Virginia, the West Virginia end of the line having been under contract for some time. Still another great work is that of the South & Western Railway, which is to build from a connection with the Chesapeake & Ohio at or near Elkhorn City, Ky., to Marion, N. C., and Spartanburg, S. C., using that part of the South & Western which has been in operation for some time between Johnson City, Tenn., and Spruce Pine, N. C. Construction is already under way in Virginia and also in North Carolina, but work will soon be started on other contracts to complete this impor-

tant line, which is to be a coal-carrying road to the South Atlantic coast. It is expected that the terminal on tidewater will be at Southport, N. C., reaching there by connection with the Seaboard Air Line at Rutherfordton, N. C., although the plans of the projectors have not yet been publicly announced.

Along the Sea to Key West.

What is doubtless the most unique piece of railroad construction in the world is that which is now being done by the Florida East Coast Railway from Homestead, Fla., to Key West, Fla. The company at first planned a line on the mainland of Florida from Miami to Cape Sable, but afterwards the engineers discovered that it would be possible and practicable to build and operate a line along the chain of islands south of the Florida peninsula and known as the Florida Keys, the distance between the islands not being in any case too great to permit of successful and substantial bridging. Where the inlets and channels are crossed the track will be so elevated from the water as to be out of reach of waves, although the force of the sea is broken by the line of reefs outside of the islands. Considerable concrete work will be required in the bridging, and its use there will constitute one of the greatest tests of endurance of this old yet comparatively new method in abutment and arch construction.

Turning again to the consideration of lines which will develop coal territory, the recent completion of the Coal & Coke Railway and the completion within the next month or two of the Western Maryland's Cumberland extension will furnish a direct through route from the Kanawha river at Charleston, W. Va., over the mountains to tidewater at Baltimore via the Coal & Coke, the West Virginia Central and the Western Maryland railroads. The Western Maryland is also pushing its plans to get a direct line through to Pittsburg, engineering corps being in the field looking for available routes northwest of Cumberland. It is rumored that the company will purchase the George's Creek & Cumberland Railroad to use it as

an entrance into Cumberland for the Pittsburgh line. This will make a more direct route from Pittsburgh to Baltimore than was at first proposed.

New Roads to New Orleans.

Great plans are made and being made in the Southwest. Notwithstanding the fact that it is already the southern terminal of several important railroads, the race to get into New Orleans is just as lively as ever. The Missouri Pacific, as hereinbefore mentioned, has just completed a connection to Memphis, and the Louisiana Railway & Navigation Co. is fast pushing completion of its road from Shreveport via Baton Rouge to the Crescent City, only a comparatively few miles remaining to be graded before the contractors will be at the city limits. The Rock Island system is also reaching down into Louisiana from Arkansas, and while it already has entrance to New Orleans through its control of the Frisco and by means of the latter's traffic arrangements, the efforts to build its own independent line are unabated and promise to be carried to completion within the next few years. The Santa Fe system is also credited with a scheme to get into New Orleans through the extension of the Jasper & Eastern Railway, which is being built from Kirbyville, Texas, to De Ridder, La., and later to Alexandria and Oakdale, in the latter State.

The Colorado Southern, New Orleans & Pacific Railway, organized during the past year, is an ambitious project, back of which is said to be a syndicate composed of B. F. Yoakum, head of the Frisco system, and others, the plan being to form a through route between New Orleans and Denver. The company has already let construction contracts to an experienced firm, and work will be done this year between Baton Rouge and DeQuincy, La., and Beaumont, Texas, about 250 miles, with a branch of about 50 miles in Louisiana. The New Orleans Great Northern Railway, which is being built by the Good-year lumber interests, is another important scheme that will have entrance to New Orleans by trackage arrangement, if not over its own line. This company purchased the East Louisiana Railroad, and is now building northward from Slidell, La., to Smith's Ferry, near Monticello, Miss., 100 miles. About 16 miles of this have been completed, and the rest is to be finished in 1906. Although the road is designed at present principally for timberland development, the plans of the backers including the construction of the largest saw-mill in the world, it is anticipated that the line will eventually be continued northward to Memphis, Tenn., as its charter permits further construction if desired. At present, however, according to official information, construction beyond Monticello is not proposed.

In the Lone Star State.

The railroad development that is being done in Texas by those railroads which are familiarly known as the Yoakum lines is extensive. The St. Louis, Brownsville & Mexico Railway has finished its extension from Robstown to Bay City, Texas, and will soon be able, by the completion of its further extension to Alvin, to send trains through by connection with the Santa Fe to both Houston and Galveston. This company is also reported to be planning the construction of a bridge over the Rio Grande at Brownsville, Texas, to connect with the National Lines of Mexico at Matamoros. The Trinity & Brazos Valley is fast pushing southward from Mexia toward Houston. The Orange & Northwestern will soon have its extension completed from Buna to Newton, Texas, and the Beaumont, Sour Lake & Western is pushing on from Sour Lake to Houston.

The Wichita Valley Railway, which has decided to build from Seymour to Stamford, is also credited to the Yoakum system. These various roads, if expectations are realized, will all be linked, and together with the proposed Colorado Southern, New Orleans & Pacific Railway will constitute an important system in the eastern and southern parts of Texas. The St. Louis, Brownsville & Mexico Railway having already adopted the name of the Gulf Coast Line, which is adequately descriptive of its location and service.

While construction in Oklahoma and Indian Territory has not been so active during the last year or two as it was in 1902 and 1903, there are several important projects under way, some of them with actual construction in progress. One of these is the Missouri, Oklahoma & Gulf Railway, which is building southward from Muskogee to Denison, Texas, and northward to Wagoner and Kansas City. The plans of the Enid, Denver & Gulf Railroad to reach north into Kansas and south to Oklahoma City are being fulfilled by degrees, and the project of the United States Construction Co. to connect Shreveport and Denver has construction in progress on the Guthrie, Fairview & Western part of the line. This road will connect with the "Orient," Arthur E. Stilwell's Kansas City and west coast of Mexico road, which has accomplished much new construction during 1905 and is pushing ahead to do even more this year.

Building to Birmingham.

Turning eastward again, the Atlantic & Birmingham Railway is seen to be unhesitatingly carrying on the construction of its extension from Montezuma, Ga., to Birmingham, Ala., together with the building of a branch to Atlanta. It is proposed to have the line finished as far as Talladega, Ala., by the end of 1906, a considerable portion having been built in Georgia during the last year. The Illinois Central's official confirmation of its reported intention to build a connecting link which will, together with trackage arrangements, afford it an entrance into Birmingham is but another evidence of the growing importance of that great industrial center and the necessity compelling various railroad companies to secure extensions thither.

Among other projects which may be mentioned are those of the Virginia & Carolina Coast Railway to build from Mackey's Ferry to Beaufort, N. C., thus forming a through route southward from Norfolk to one of the principal coast cities of the Tar Heel State, for which the contract has been awarded, and the plan of the Southern Railway to build from Maryville, Tenn., to Bushnell, N. C., along the Little Tennessee river, which is likewise in the hands of contractors. This latter will also probably within the next year or two be connected with the Tallulah Falls Railway, which is building northward about as rapidly as difficult construction will permit from Tallulah Falls, Ga., to Franklin, N. C. The Louisville & Nashville's new through line from Cincinnati to Atlanta is another great piece of work which will be finished in 1906 by the closing of a link between Knoxville and the capital of Georgia. This is being done by the reconstruction and rebuilding of the Atlanta, Knoxville & Northern in part and by the construction of an entirely new line from Etowah, Tenn., to Cartersville, Ga. The line north of Knoxville to Jellico was finished a year ago, and the improvement of connecting links in Kentucky is now under way, so that before many months have passed this new route will be in operation.

The vast importance of the development of coal territory in Eastern Kentucky, Southwestern Virginia and in adjacent

portions of other States directs attention to the declared plans of Eugene Zimmerman and associates to build from Iron-ton, Ohio, about 125 miles or further south into Eastern Kentucky. How much farther this line may be extended is problematical, but it is expected that it will probably form part of a north and south route through the Appalachian ranges. Another possible coal line may also be formed by connecting up the Carolina & Northwestern, the Caldwell & Northern, the Linville River Railway and the East Tennessee & Western North Carolina Railway. The first two and the last two roads are already connected, and a connection will soon be established between the Caldwell & Northern and the Linville River road. The East Tennessee & Western North Carolina and the Linville River Railway are both narrow-gauge roads, but so was the Caldwell & Northern until recently, when it was converted to standard gauge to conform to the gauge of the Carolina Northwestern, of which it is practically a part. The construction on the Caldwell & Northern has been of a heavy character, indicating a purpose to make it suitable for a large freight traffic. Should the two roads which are now narrow gauge be converted to standard there would be formed a through route from Johnson City, Tenn., via Elizabethton, Tenn., and Lenoir, Newton, Lincolnton and Dallas, N. C., to Yorkville and Chester, S. C. This route would connect with both the Seaboard Air Line and the Southern Railway at more than one point, and it has been suggested that the purpose of the Virginia & Southwestern Railway, Henry K. McHarg's road, would be to seek a tidewater outlet by this route, although nothing official has appeared to confirm such a theory.

The work that is to be done by the Missouri Pacific Railway during 1906 in both Arkansas and Louisiana is very nearly if not quite as important as the building of the White River extension. The Gurdon & Fort Smith line via Caddo Gap is to be pushed. Some construction has already been done northwest from Antoine, on the Gurdon end of the line, and also at Caddo Gap to secure the right of way to that pass. The line from Eudora, Ark., to Gilbert, La., is also a valuable piece of work which is to be finished, if expectations are realized, before the end of the year.

Terminal and Other Improvements.

In the way of terminal improvements the completion of a new passenger station at Atlanta is probably the most conspicuous. This work, which was directed principally by the Southern Railway, was also for the accommodation of other roads associated with it in the enterprise, and now plans are advanced for another handsome terminal in Birmingham. The building of a freight depot by the Southern Railway in Atlanta has also been taken up. At New Orleans the Chalmette terminal improvement by the Frisco continues, and also the rebuilding of the Illinois Central's piers and elevators that were burned. At the same city the New Orleans Terminal Co., in which the Southern Railway and the Frisco systems are concerned, is also progressing with its passenger-station construction. At various other points terminal improvements of greater or lesser importance have also been undertaken or are in contemplation. The building of second track on busy sections of the Southern Railway, the Atlantic Coast Line, the Queen & Crescent Route, the Illinois Central and other roads is also noteworthy.

INDUSTRIAL POWER IN PIEDMONT CAROLINAS.

By JOHN WOOD, Secretary the Commercial Club, Rock Hill, S. C.

[Written for the Manufacturers' Record.]

For long years following the Civil War the great stretches of fertile lands lying among the foothills of Southern North Carolina and Northern South Carolina were but poorly and partially tended. While capable of producing the best of crops, diversified and abundant, they were in large part idle, there being neither the means nor the time for the cultivation of more acres than were imperatively necessary for subsistence. Through these lands streams flowed that, beyond their fertilizing value, were held in slight regard. Beneath the soil lay minerals that were given little thought or remained disregarded altogether. The prices of farm products were such as to render farming unprofitable and prohibitive of progressive methods. The people, broken upon the wheel of adversity, struggled with such instruments as they could reach to provide themselves with the necessities of life and their children with what schooling they could get between the hours of toil. In those days there was but one feature of development that was thought to present promise, and that was the railroad, the pioneer of the great industrial transformation in this country. There was no dream of harnessed waters, of the hundreds of mills, of the wide demand for timber, of the value of mines, of the rapid increase in value of cotton, wheat, corn, tobacco, etc., of the call for skilled labor, of the influx of millions of capital and the turning of the tide of home and investment-seeking classes that later began and now has reached a steady and ever-increasing flow.

It is almost incredible, but nevertheless true, that the Piedmont Carolinas, today engaging the attention of the world, boast-

ing of thousands of horses of electric power generated along its streams, rapidly becoming the cotton-manufacturing center of the country, aiding no little by being able to hold back its crops and living the while in independence in the encouraging efforts of the Southern farmer to control the price for which he shall sell the product of his labor, had little thought of the coming about of all these things. It has transpired in less than a generation, but it is also true that although much has been done, whatever has been accomplished is but the beginning of a transition that will be even more astonishing. The vast sums of money being spent by shrewd business men, the hopefulness of all classes, the building of great industrial schemes now going on, are warrant for the prevailing optimism were there lacking no other material evidences such as the enhancement in city, town and country property and the increase in tax returns.

The activity among railroad projectors just now is the broadest ever known in the South and the most important in its bearing upon its prosperity both now and in the future. This activity has in view, with few exceptions, the linking of the coast with the Northwest and all that the successful connections of this character means. But incidental to, if not primal in cause, entry into and outlet from, in both directions, the coal fields of Virginia, West Virginia and Tennessee present a bone of contention that has probably been the greatest factor in this unprecedented era of railroad construction. The bearing this will have upon this territory is too plain for comment. Traversing the Piedmont Carolinas, these roads would bring addi-

tional advantages in freight rates, additional investments and thousands of employees and settlers. All eyes are just now turned towards the North Carolina mountains, through which the South & Western is forcing its way from Spruce Pine and completing a link in the chain of a great system beginning at the Great Lakes, passing through and controlling immense coal deposits and terminating at Southport, on the Carolina coast. A branch will go into Spartanburg, S. C., and other developments now pending would indicate still another line to the coast. The Southern Railway is likewise building through the mountains near Marion, N. C., while at the same time revamping the old Three Cs road, extending from Marion to Charleston, where increased facilities will be provided for terminals of a trunk line for coal. The Carolina & Northwestern, extending from Chester, S. C., to Lenoir, N. C., is forging further into the mountains. Improvements in equipments, station buildings, roadbeds, bridges, etc., indicate expectations of a new order of things for the railroads also. The Southern Power Co. is building to a connection with the Seaboard Air Line from its five-million-dollar plant being constructed on the Catawba river in South Carolina. It is also building in the opposite direction towards Camden and deep water, opening a rich territory, the granite deposits of which alone are estimated to be worth many thousands of dollars. Timber and excellent farming lands heretofore cut off will be tapped and given outlet. From the Seaboard Air Line connection referred to a line has been surveyed to Rock Hill, a distance of about seven miles. The maximum grade will be 1 per cent., which, in fact, will be about that of the line through to deep water. The extension to Rock Hill, the promoters indicate, is practically assured, and will be known under the name of the Rock Hill Railroad Co.

But if the railroads have been the prime movers in the development of the Piedmont Carolinas, the installation of electric-power plants has placed that development upon an entirely new plane, opened up hitherto unthought-of possibilities and forming a basis of assurance and permanency, two factors indispensable in the creation of confidence. This field in itself and alone, to describe, would require far more space than is here available. A glance at it, however, will enable the observer to derive an idea of its enormity. The two greatest developments are undoubtedly the Whitney in North Carolina and the Southern Power Co. in South Carolina, the two being but a short distance apart, but for that reason valuable, as suggestive of the color of the future of this section, as many thousands of horse-power will be made ready for a market that these astute business men must believe is either now ready for it or about to become so. It is estimated that the streams within a radius of 60 miles of Charlotte, N. C., are capable of producing upwards of 1,000,000 horse-power for industrial purposes. The Southern Power Co. has already placed 5000 horse-power in Charlotte, and with the Whitney Company, when the developments of both are completed, should have ready for market some 60,000 or 80,000 more. Were the capacities of the water-powers in this section all utilized there would be sufficient to operate over 1,000,000 looms and 30,000,000 spindles. That almost 100,000 horse-power will be wired over the Piedmont Carolinas in the next two or more years seems now to be beyond doubt.

The Whitney plant, situated on the Yadkin river in North Carolina, has impounded a stream having a 320-foot fall in 10 miles and a total estimated fall from its rise in the mountains to its mouth of

3500 feet. Power may be transmitted from it to Durham, N. C., a distance of 78 miles. Other points in North Carolina, varying in distance from 8 to 78 miles from the plant, and which may be supplied, are Albemarle, Salisbury, Concord, Charlotte, Spencer, Lexington, High Point, Thomasville, Greensboro, Wadesboro, Monroe, Statesville, Winston and others. The city of Charlotte is but 40 miles from the Whitney plant. As the 250 or more cotton-manufacturing enterprises of North Carolina are located for the most part within reach of this power, the impetus to be given this industry alone, to say nothing of the thousand and one other uses to which electric power may be applied, will be incalculable.

Eighteen miles from Charlotte, but in the opposite direction, lies the plant of the Catawba Power Co., now a part of the Southern Power Co. This is on the Catawba river, and was completed in 1904 at a cost of some \$1,100,000. It is supplying power for lighting, for mills and other industries in Rock Hill, Fort Mill, S. C.; Pineville and Charlotte, N. C. It is now being carried into Yorkville, S. C. Its output is being rapidly taken. Following the completion of this plant came the organization of the Southern Power Co., with capital of \$7,500,000. Twenty miles below Rock Hill at Great Falls, on the Catawba river, developments to cost \$5,000,000 have been begun in that neighborhood. It will require five years to complete this gigantic task. The railroad above referred to is a consequence of the beginning of this construction. Power is to be transmitted as far as Columbia, S. C., 60 or more miles distant; Spartanburg, about 80 miles away, and probably to many other points, of which there are many, such as Chester, Winnsboro, Lancaster, Camden, etc., over the upper length of the State. Advances have just been received to the effect that this company has acquired water-power on Broad river between Gaffney and Blacksburg, S. C., and that a development to produce from 10,000 to 12,000 horse-power at an expenditure of \$1,000,000 will be begun as soon as possible. This completes a list of seven different sites held by the Southern Power Co., viz., the Catawba, near Rock Hill; Great Falls; Wateree, near Camden; a portion of the Landsford, near Lancaster; the Lookout, near Statesville, N. C.; the Horseford, near Hickory, and the 99 islands, near Blacksburg. A total horse-power of between 75,000 and 100,000 may be counted upon. Thousands of acres of land owned by these power companies will sooner or later be thrown open to colonization, and as they are situated largely along streams, are of great value for farming purposes. There are still many other power developments, each having its weight in bringing forward the advantages of its territory. Among them are the plants at Buckhorn Falls, on the Cape Fear river; Neal Shoals, near Union, S. C.; Ware's Shoals, on the Saluda river near Greenville, and developments near Spartanburg, S. C.

Industrially, the awakening in the Piedmont Carolinas has kept pace with the progress above mentioned. Cotton-manufacturing centers have sprung up in Anderson, Greenville, Spartanburg, Yorkville, Rock Hill, Chester, Lancaster, S. C., and at Charlotte, Concord, Gastonia and other points in North Carolina. Furniture, wagons, buggies, farming implements, machinery, clothing, underwear, hosiery and other articles are receiving constantly-growing attention among manufacturers. The ore deposits of this section are proving valuable to prospectors, gold and tin each being found in quantity. Granite and building stone, splendid sands, potter's

clay and other sources of wealth are awaiting development.

Farming lands have enhanced greatly in value in the last few years as the demand for them has increased and their excellence has become known. There are, however, still many idle acres awaiting the settler that can be had for \$6 per acre up. It cannot remain idle long. Much land that could have been bought a few years ago for a song is held now for from \$25 to \$40 and \$50 an acre, the increase in value being due to development as much as to the quality of the soil. Without exception the towns and cities of the Piedmont Carolinas are enjoying exceptional, though healthy, growth. City property is perhaps worth double the value set upon it 10 years ago. The year just ended has been among the best that has come to this section since the Civil War. Good crops, good prices, money in plenty, rates of interest being lowered by the

banks, new banks springing up on all sides to meet the demands of a prosperous people, new capital flowing into the towns, cities and farming interests and other features too numerous to enumerate have marked the progress and close of 1905. There is a golden harvest here for those willing to work, rich returns from honest toil. Lands that will produce two crops a year are ready for the large planter as well as the small trucker. Power for vast factories and the smallest enterprise is on the market. There are the advantages of elevation, natural drainage, unsurpassed records for health, proximity to the largest cities of the East, ready access to the coast, trunk lines forming a network of direct communication with the world and numerous thriving large towns—these and many other advantages which are features with which this territory, now undergoing so remarkable a change, is endowed.

Rock Hill, S. C.

BROAD BASIS FOR SOUTHERN SELF-RELIANCE.

By FORMER UNITED STATES SENATOR M. C. BUTLER of South Carolina.

[Written for the Manufacturers' Record.]

It is a matter of great surprise that so large a majority of the people of the South, myself among the number, perhaps, have such a slight appreciation of the vast valuable undeveloped resources of their section. At the risk of being charged with prolixity and of repeating a "thrice-told tale" I am going to ask your forgiveness while I recall attention to them.

If you will look over the map of the United States between about the 26th and 35th parallels of north latitude and from the Roanoke river on the east to the western boundary of Texas, Arkansas and Oklahoma, embracing within those limits the States of North and South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Arkansas, Texas, Oklahoma and Indian Territory, you will find what is commonly known as the cotton belt of the United States, and, it might be added, the greatest cotton belt in the world.

Now, if you will draw a line from Weldon, N. C., on the Roanoke, via Cheraw, S. C., on the Pee Dee, Camden, S. C., on the Wateree, Columbia, S. C., on the Congaree, Augusta, Ga., on the Savannah, and Columbus, Ga., on the Chattahoochee, and the intermediate streams on the same general line, you will find on those streams and their affluents water-power enough, if harnessed and utilized, to manufacture every pound of cotton and grind every bushel of grain produced in the cotton belt. The line suggested would run along or near that wonderful granite formation where the streams cease to be shoal, and move off into smooth and for the most part navigable water to their termination in the Atlantic or Gulf. Another thing will be observed—these streams and their affluents and the harbors into which they empty are never troubled or obstructed with ice. A step farther, if you will cross the divide which separates the waters which flow into the Atlantic and Gulf and Mississippi and Gulf, you can find in the Tennessee and Cumberland rivers and the Arkansas and Red rivers and their affluents and intermediate streams a duplicate of the water-power of their sister streams in the cotton belt mentioned above. The supply of building and paving stone and clay for common brick and for vitrified and fire brick and marble is inexhaustible and the most of it of the finest quality.

What food products can be profitably raised in the cotton belt? All the cereals, Indian corn, wheat, rye, barley, oats, buckwheat, rice and millet, together with

sugar and salt. While sugar is not a cereal, it is almost indispensable as an article of food, and so of salt. More of the human family subsist on rice than on any one food product. Cottonseed oil has become a valuable article of food. Food is the first thing required when we come into the world; clothing the next. We have seen what the cotton belt can do in the way of food. Later I will enumerate additional varieties of food.

What of clothing, or rather materials from which clothing is made—wool, cotton, silk, leather, flax, hemp, ramie, pelts? I don't suppose it would be an exaggeration to say that more of the human family depend on cotton for clothing and shelter than any other one article—certainly on cotton and wool.

The cotton belt can produce all the meat food products necessary for the liberal subsistence of its inhabitants—cattle, hogs, sheep, goats; all animals necessary for draft and transportation purposes—horses, mules, oxen, jacks and jennets; all the fruits grown outside the tropics and many of the tropical fruits in the lowest sections of the cotton belt—apples, peaches, apricots, pears, quinces, grapes, currants, figs, and almost every variety of berry—strawberries, raspberries, blackberries, dewberries, huckleberries, gooseberries, etc.; vegetables, such as, for instance, grow and mature above ground—okra, tomatoes, beans, peas, eggplant, cucumbers, artichokes, squashes, etc.; root crops, such as grow and mature under ground—sweet and Irish potatoes, beets, turnips, carrots, parsnips, salsify, ground peas, chufas, artichokes, radishes, etc.; the finest watermelons, muskmelons, cantaloupes, citron plants and pumpkins.

If you will extend the lines I have indicated for the cotton belt proper so as to embrace the States of Maryland, Virginia, West Virginia, Kentucky and Missouri, you can find, with that area in the cotton belt, coal, lime and iron ore enough to manufacture every implement of husbandry and those articles used for domestic purposes to supply every inhabitant within those boundaries and thousands to spare for export into other States and countries. In enumerating thus some of the resources of the cotton belt I omitted to mention tobacco, alcoholic spirits, wine, beer. I might also mention the toothsome and abundant supply of the finest fish that swim in our waters—the terrapin, oyster, crab, clam, shrimp and cooter of the shell-fish species, but fear I have already tried your patience by too much detail, some

would probably say trifles, but when the sum total of all these apparent trifles are divided by the wants and comforts of the people and are intelligently taken advantage of they become almost incalculable. In 10 years' time the cotton belt will be

the richest agricultural and manufacturing country in the world and furnish more of the comforts and luxuries of life than any other known part of the universe of the same area.

Woodlawn, S. C.

THE SOUTH: WHAT OF ITS FUTURE?

By COL. J. B. KILLEBREW.

[Written for the Manufacturers' Record.]

The astounding progress in material development made by the Southern States during the last quarter of a century is a surprise and marvel to all civilized nations. Handicapped as the Southern people were by the most odious restrictions, destitute of ready capital, wanting in railroad facilities, without industrial training, dependent upon the most ignorant and the most prejudiced laborers with the instincts and habits of stone but with the arrogance of rulers, the tools of designing politicians and easily swayed to perform acts prejudicial to all material progress and to the destruction of property, surely the Southern people were placed in a position the least favorable to the accomplishment of prosperous end. The social structure was peculiar in the fact that millions of slaves were turned loose without masters to direct them, and thousands of masters reared to rule were without slaves and without power even to enact laws for the protection of their property or themselves. The situation required men of the sternest type. To win victory against the powerful forces that stood for 15 years arrayed against the best interests of the South was an achievement rarely equalled and never surpassed in the history of civilization. But the same people who had battled for four long years for the maintenance of a principle, and had endured a humiliation for a longer period after the cessation of hostilities, more depressing, indeed, and more dreadful than the war itself, were not spiritless. They entered upon the duties that lay before them, and the land for which they had sacrificed everything save honor became the object of their most special study and labor. They determined that it should become in time one of the most prosperous regions in all the dominions of Christendom; that they would win for it material and mental supremacy. For 25 years this contest for supremacy has been going on, and now, like Moses when he stood upon Mt. Pisgah, they can see opened out before them the promised land—a land of the richest fruitfulness, a land flowing with milk and honey, a land with the fullest capabilities and the greatest opportunities.

It may be permitted to those who long struggled through the weary wastes of a financial desert to indulge the imagination in the contemplation of the pleasing prospects that lie before them. Enough has been done to justify the expectation that before 25 years shall have passed away the South, moving forward with the same acceleration as in the past quarter of a century, will be, person for person, the wealthiest part of the globe. Great marts and emporiums will spring up on the coast line of the South and the streams of commerce will broaden until they shall pour a flood of golden glory into its lap. Splendid schools of learning will be established where the youth of the South may be trained in all branches of learning, technical art and science, as well as in the humanities. The grandeur of the intellect will keep pace with the accomplishment of material ends. Factories will gladden the banks of every stream and will convert the rough materials into ready wealth. Millions of happy homes will be built in the fertile valleys and on the beautiful

slopes of the hills and on the mountain tops in a climate so generous and so kind that the pleasure of life itself will be durable and its ills forgotten. Law and order and the highest civilizing influences will characterize a people with happy environments. Nor will they be content simply with a world of water-wheels, power looms, automats and the paraphernalia that ministers to sordid enjoyments as to a sensual nature. Social elevation maintained in all its strength and social purity, let us hope, will always be the greatest characteristics of the Southern people. Money without that will be a delusion and a snare. The people of the South should strive more earnestly to maintain their character for lofty virtues than for material magnificence. They should be as beautiful in character as their own land is in the splendid endowments of nature, "one which fruits and flowers blush in social sweetness."

How rapid has been this progress toward the attainment of an ideal land may be illustrated by a few significant figures. The South, notwithstanding its desolation 40 years ago, has now as much wealth and shows a higher development in many lines than the whole United States did in 1860. Then the bank deposits for the whole country amounted to only \$253,800,000. The South has now in its banks of all kinds, private and trust banks, deposits amounting to \$1,000,000,000, and of this the national banks have \$469,032,000. Its national banks have a surplus also of over \$50,000,000 and individual profits of \$27,000,000.

The railroad mileage in the United States in 1860 was 30,592; the South now has a mileage of over 60,000. The amount of pig-iron produced in the United States in 1860 was 884,474 tons; the South now produces 3,100,000 tons. The output of coal mined in the United States in 1860 was 15,173,000 tons; the South's output is now 70,000,000 tons. The corn crop in the United States in 1860 reached only \$36,404,593 bushels; the South now markets nearly 700,000,000 bushels. The tobacco produced in 1860 in the United States amounted to 434,185,561 pounds; the South produced 665,184,370 pounds in 1899. The cotton spindles in operation in the United States in 1860 were 5,235,727; in the South in 1905, 9,205,949. The total value of the products of cotton mills in 1860 was \$115,681,754; in 1900 the value of cotton goods manufactured in the South was \$100,425,310. Estimated on the basis of spindles in operation in 1905 the value of cotton goods manufactured in the South should be at the present time \$207,500,000. The value of property in the United States in 1860 was \$16,159,000,000; in the South the value of property in 1905 is estimated to be an equal sum.

Most of the development of the South has been made within the past 25 years. Previous to that time there was but little money in the country. Everybody was hard-pressed. There was no prosperity and but little incentive to exertion. There were but few banks. Interest ruled high, too high for the profitable investment of money in industrial pursuits or manufacturing. The rich, varied and not to say

exhaustless stores of mineral wealth interested no capitalist except in a small experimental way. Cotton and tobacco grown in the South were more largely manufactured elsewhere. An apathy reigned over the people that prognosticated no advancement for the South. The first grand awakening to the rich opportunities afforded by the South came with the inauguration of the exposition at Atlanta in 1881. The exhibits there of coal, iron ore, copper, phosphates, cotton, wool, timber and other raw materials of the Southern States was a revelation to Northern capitalists. But even then they were averse to investing money in Southern enterprises until the Southern people had demonstrated the value of Southern manufactures. The Red mountain at Birmingham, Ala., contributing hundreds of millions of tons of iron ore, could not be sold for \$50,000; it is now worth \$100,000,000. But the faith and energy of the Southern people demonstrated to the satisfaction of the most incredulous that the coal and iron and other resources of the South would prove a rich mine of wealth to the country. It has done so.

Since 1880 the capital invested in the manufacture of cotton in the South has increased 100 per cent. The cotton consumed surpasses in amount that taken for the cotton mills of the North, now reaching 2,163,000 bales, as against 225,000 bales in 1880. The increase in the railroad mileage from 26,000 in 1880 to 60,000 miles in 1905 has opened up many wide areas of rich agricultural lands, but more than all it has made the development of large portions of the 50,000 square miles of coal measures in the South possible and highly profitable. The output of coal has increased from 6,000,000 tons in 1880 to 70,000,000 tons in 1905. The coal production of the South is now one-twelfth of the entire production of the world, and more than that of either France, Austria, Hungary or Belgium, and one-fourth as much as the output of the United Kingdom and half as much as the output of bituminous coal in the United States in 1895. It is nearly as large as the entire tonnage of both bituminous and anthracite coal in the United States in 1880, and 24,000,000 tons greater than the entire output of the United States 25 years ago.

The growth of the iron industry is equally as satisfying and as gratifying. In 1880 the product of Southern furnaces amounted to 377,000 tons; in 1905 the product will be approximately 3,100,000 tons, and the prospects for a still greater production for the coming year are exceedingly bright. With the advantages that the South has for the economical assemblage of iron ore, coal and fluxing material and the making of cheap iron, it is altogether probable that the ratio of increase will be much greater in the South for the coming year. The growing demand for iron in the United States, now reaching 25,000,000 tons annually, will call for the utilization of the large iron and coal deposits of the South. The rapid growth of the great iron centers of the Southern States is a justification of the prophecy that in a short time the South will be making 7,000,000 tons of pig-iron and steel. It is amazing to think that the South, with all its hindrances, is now producing 300,000 more tons of pig-iron than the whole United States produced in 1879, and more than was produced in England in 1855.

In all classes of manufacturing industries the South is making wonderful strides. The capital invested has been increased sixfold within the past 25 years, and the value of the products fivefold, and manufacturing has been extended until it embraces almost an endless variety of

products. It enjoys now the supremacy of the world in the manufacture of fertilizer, lumber and tobacco. Its ratio in the growth of manufacturing industry far outstrips the Northern States. The investments made in manufactures in the South between 1880 and 1900 were 348 per cent.; in the whole United States, 252 per cent. These would give a relative percentage between the investments North and South of 348 for the South and about 205 for the North. In the value of factory products the percentage of growth in the South on comparison with the whole country is from 219 to 142.

The progress of the South is surely indicated in the increase in the assessments of property. In 1880 the assessments of property in the Southern States was \$3,051,175,000; in 1905, \$6,500,000,000—a vast increase due to the improvements that have been made in the farming areas, to the growth of manufactures and mining and to increase in many other industries. It may be mentioned that the assessments of property in the Southern States represent only about two-thirds of the value of the real estate and one-fifth of the value of personal property.

In the matter of farm products the South has advanced from a value of \$660,000,000 in 1880 to \$1,750,000,000 in 1905. This is a tremendous increase, startling almost in its magnitude when one reflects that only 20 per cent. of the South's area is in cultivation and further considers that the South has received but a slight benefit from the large immigration to the United States, and that the farm labor has been generally inefficient in its ignorance and in its want of steadiness and reliability. The increase has been largely due to the better management of the farms, to the high fertilization of the soil, to more intensive methods of farming, to bringing into cultivation an increased acreage of virgin soils, to the gradual spread of intelligence among the farm laborers, and, as a result of this intelligence, to the more extensive employment of farm machinery. The yield per acre of newly-sown crops has been increased during the past 25 years. The yield of wheat averages now from 11 to 14 bushels per acre, as against 8 to 10 bushels 20 years ago. Its cultivation is gradually extending, and with the abundant supply of fertilizers there is but little doubt that the South will pass through the same experience that England did after the discovery of guano in 1840 on the islands west of the coast of Peru. The average yield of wheat in England previous to this discovery was about what it is now in the Southern States. The yield in England is now from 28 to 30 bushels per acre. Is it not possible that in another score of years the South may be making from 20 to 30 bushels of wheat per acre? The same comparative results may be expected in the case of other crops, such as corn, cotton, tobacco, sugar and rice. The more intelligent the labor and the greater the fertilization of the soil the higher will be the profits of agriculture and the greater the value of the farming lands of the South.

The farmers of the South even now are prospering as they never have before in their history. They have become interested in the local banks, and many of them are large stockholders. Another notable advance among the cultivators of the soil is their ability to pay cash for supplies and labor, and, by reason of this independence of the country stores where enormous rates were paid for in advance, they are able to save in the aggregate many millions of dollars formerly paid out for supplies. Labor has been improved by the payment of ready cash, and each farmer or planter feels himself to be a proud and industrious proprietor, and not

a slave to debt. As stated in the recent report of the Secretary of Agriculture, the farmers now have on deposit \$1,000,000, 000 in the banks, and this vast sum has come from the legitimate profits of agriculture. A cotton crop that will bring to the planters \$650,000,000 is sure to leave behind a large surplus after all expenses have been paid. The result of this surplus is that since March 14, 1900, 633 national banks have been established, or 36.1 per cent. of the total number organized since the amendment of the banking act permitting a capital of less than \$50,000 to be used in establishing a national bank. The increase in the deposits all over the country has grown enormously during the past 25 years. This results both from the increased prosperity of the people and the establishment of convenient fiscal agencies. The number of banks in the United States a quarter of a century ago were 2600; it is now 5757. The South then had 220; now 1221. While the deposits of the whole country have increased 129.2 per cent., the deposits in the South Atlantic States have increased 197.4 per cent. The North Central States increased their banking deposits during the same period only 102.3 per cent.

These figures are a gratifying exhibit to the people of the South, but while they show the actual progress made from a financial point of view, they do not tell the whole story of the South's happy conditions.

A better barometer of the Southern States is the optimism of the Southern people. They have a sublime faith in their future destiny. They are cognizant of their own powers. Adversity has strengthened them; poverty has taught them the needed lessons of economy and thrift. Everybody seems to be animated by the spirit of progress. This spirit seems to be breathed by every wind, murmured by every stream, written on every sunbeam, and it is felt in the consciousness of every human heart. This spirit, born of success and prosperity, is irrepressible, and it will lead on to higher fortune and a more glorious destiny. A people who believe in themselves are already great. Obloquy but whets their desire to rise to greater heights. Prejudice wins no victories against such a people, and opposition is like the breeze that sends the kite to the blue empyrean above. The South has contributed some of the most potent factors in the enrichment of the nation. These factors are its cotton crop, grown to a large extent upon its splendid and generous soils, that are better adapted to the growth of that great staple, destined to clothe the world, than any other soils yet discovered; its glorious and agreeable climate, where the degrees of sunshine and humidity are so beautifully ordered and so wisely regulated as to bring to perfection the greatest variety of the most profitable crops of the earth, and where the health of man and beast reaches its maximum; the large deposits of mineral wealth, including those most coveted by civilized man—coal, iron, copper, lead, phosphates, gold, petroleum and numerous others of minor importance; its ability to feed and clothe ten times its present population and by manufacturing its own material to give them all profitable employment; the ability to make cheap iron, the greatest lever of civilization; the capacity of the soil to grow every important crop except coffee and the spices, and even they might be grown if properly acclimated; the capacity of the great water-ways of the streams that flow from mountain top to valley plain all over the South, enough to manufacture all the new materials into products of high value and a light up every home with the splendor of electricity and to drive through its

transmitted powers all the street cars, cotton mills and other manufactories that may be established; its great forests that supply fully 150 varieties of lumber suited for almost every purpose for which timber is employed by man; its building materials—lumber, clay, stone, marble, cement—that are not surpassed in excellence by the building materials of any other country for durability, for ornamentation, for their accessibility, cheapness and abundance. The marble of the South goes everywhere. It flashes in huge beauty in the imperial structures of the Old World; it embellishes the corridors of the Capitol at Washington; it shows itself in the crowning ornaments of the State capitols; it marks the resting-places of the soldiers who sleep in glory and fame in cemeteries guarded and protected by a nation's love and gratitude. Wherever one may go, the marbles of Tennessee and Georgia stand matchless for their beauty, for their variety and for their strength.

I have already gone beyond the limits assigned for this paper, and cannot go into further details. Enough has been given to show the immense and incalculable possibilities of the South. Take the great products in which the South has a virtual monopoly—cotton, tobacco, phosphates—and they could be made the prolific mother of the greatest opulence to the nation. Add to these the other great resources of the South common to other countries converted into manufactured form, and the human mind cannot grasp the mighty results that are destined to flow from them. The building of the Panama canal will open to the industrial and agricultural productions of the South the largest markets ever employed by commerce. A thousand million of people will be ready to welcome the trade in Southern staples and manufactures. Southern cotton will clothe, Southern grain and provisions will feed, and Southern tobacco will soothe the temper or stimulate the actions or regale the senses of millions of people whose lives will be made better and happier from their intercourse with the South. There is a future for the South in the contemplation of which the imagination wearies and the powers of mental conception utterly fail. When the great steam vessels like shuttles shall weave the mighty fabric of commerce stretching between the Orient and the Occident they will gather the wool largely from the resources of the Southern States. When the Gulf of Mexico becomes the Mediterranean of the western world it will become the store-center of commerce, with the South clinging to it in beautiful and fruitful shores on its northern limit, and upon these shores great cities will arise to catch the glory and much of the opulence that will gather within the influence of the link that will bind together the two greatest highways of commerce in all the earth.

But all their resources, capabilities, advantages, adaptabilities, comforts and surroundings are of but little advantage without a brave, manly, honest and intelligent citizenship. Wealth cannot dignify dishonesty nor cure the stupidity of ignorance nor bring about a cowardly spirit. Of all the resources of the South, the character of its people is the most valuable. They have builded a monument for themselves more precious than diamonds, more priceless than gold, more comely than beauty, more lovely and pure than the radiance that streams from brightest stars of midnight. Let it never be forgotten that the character of the Southern people is the South's most enduring capital. Around such a people wealth will gather, because it is safe; schools and colleges will be established and liberty supported. Churches will exercise their beneficent in-

fluence. Intelligence and morality will become dominant forces. Gorgeous views of the coming splendor and greatness of the Southern land pass like a grand panorama before my imagination.

I see at the expiration of 25 years a population of 50,000,000 souls, blessed and guided by the Anglo-Saxon instincts for liberty and justice and common sense. I see the Southern statesmen prominent in the councils of the nation, honored and respected for their wisdom and consideration. I see homes provided with electric lights making the nights as splendid as the day, with rural routes and telephones imparting intelligence to every citizen of the land. I see public and private virtue held in the highest reverence. I see money held in subordination to honesty and purity of life. I see the untaught graces and decencies of the citizens encouraged and practiced all over the land. I see the pride of the citizens everywhere manifested in the study of the achievements and high principles that controlled their ancestors. I see the public schools held

in houses of beautiful architecture and conducted by teachers trained in all the methods and in all the forms and elegancies of an advanced civilization. I witness with pride the public spirit that builds good roads, improves the harbors and rivers, bridging wide streams and estuaries, establishes good seats of learning and provides for the dependent classes of society, relieving distress, mitigating pain and extinguishing disease. I see, as the result of the carefully-conducted labors of the scientific physician, the great "white malady" arrested and destroyed in its devastating course. I see life lengthened and the powers of the human muscle multiplied many fold. I see ten thousand factories and a thousand mines giving profitable employment to the artisan and miner, and hundreds of thousands of fields and gardens and orchards and pastures providing for their sustenance.

With such visions of glory we may all raise our voices in the joyful exultation: "Glory be to God on high, and on earth, peace, good-will toward men."

THE SOUTHERN COTTON ASSOCIATION.

By PRESIDENT HARVE JORDAN.

[Written for the Manufacturers' Record.]

The Southern Cotton Association came into existence during a critical period of the South's history on January 26, 1905. For 40 years the Southern cotton producers had bent their best energies and abilities in the field of production. The problem of production had for many years been solved, and in 1904 culminated in an extensive overproduction. With an anticipated surplus of 2,000,000 bales of American cotton beyond the needs of consumption the opening of the new year of 1905 found the staple at all interior points throughout the entire cotton belt selling at prices far below the cost of production. Southern bankers in a loyal and patriotic effort were advancing millions of dollars to the growers on cotton in storage in a supreme effort to assist the planters to hold back the staple, that it might not be sacrificed on a terribly depressed market. While for several years the question of giving more attention to marketing the staple before it left the hands of the producers had been diligently agitated, the people were not fully aroused to their impending danger until they stood face to face with the terrible crisis which confronted them at the close of the year 1904. The New Orleans Cotton Convention was called for January 26-28, 1905, to consider immediate plans of relief through some effective machinery which would secure the active co-operation and support of the cotton-growers, bankers, merchants and all allied interests in the South. The convention was largely attended by representative men from all the cotton States, who labored together unceasingly and loyally for three days. The convention consisted of 3500 delegates, representing every agricultural, commercial, industrial and financial interest in the South. The Southern Cotton Association became a living, breathing power of strength as a representative organization of Southern supremacy in the future handling and marketing of the South's great staple product, cotton. With its inception came a new spirit of hope, enthusiasm and determination in the hearts of the South's loyal and patriotic people. The dawn of a new era suddenly appeared above the horizon, and a ray of sunshine pierced the clouds that were at that time hanging so heavily over the heads of every business interest south of the Mason and Dixon line.

Success Came With System.

On January 26, 1905, nearly 5,000,000 bales of cotton remained in the hands of

the farmers, either in the form of commercial bales or in the fields to be gathered from the largest crop, by nearly 3,000,000 bales, that the South had ever produced. With almost insurmountable obstacles ahead, with this enormous amount of unsold cotton in the hands of a heterogeneous mass of unprepared, unorganized people, with no knowledge of marketing and unable to finance or properly store the staple, the cotton-growers faced the stupendous undertaking of a struggle against the combined capital and brain of the world whose leaders were flushed with past victories and fully conscious of the enormous advantage on their side.

There is no stronger weapon in the hand of any man than that of true patriotism to a loyal cause. The people rallied together from North Carolina to the Rio Grande under the flag of the Southern Cotton Association and pledged their unflinching allegiance to its leadership. Organizations were rapidly perfected throughout all the cotton States and counties. The Southern press loyally supported the movement and poured column after column of encouragement into the homes of hundreds of thousands of planters. The unsold portion of the crop was tied up and held for 10 cents per pound, nearly \$20 per bale higher than the markets authorized on February 1, 1905. The cotton area was reduced nearly 5,000,000 acres under the area planted in 1904. The use of guano under cotton was reduced fully 20 per cent. The entire cotton trade of the world was amazed and astounded at the systematic and determined action of the planters, backed up, as they were, by Southern bankers and the combined moral support of the press and all Southern interests. On July 4, five months after the organization of the association, the price of cotton had reached 10 cents per pound at all interior points, and the first great victory of the people had been won. This fully demonstrated the power and wisdom of systematic and effective organization for the purpose of solving the difficult problem of marketing the South's staple crop at a profit to the producers.

Other Effective Work.

For many years charges had been preferred against officials connected with the Bureau of Cotton Statistics at Washington, D. C. Investigating committees had been appointed by Congress to examine into these charges of manipulating the reports fraudulently and giving out advance

information for purely speculative purposes, and to the heavy financial loss and detriment to the business interests of the country. Nothing was accomplished by congressional investigating committees. Their reports were pigeonholed in star chamber meetings and the offending officials whitewashed. In June, 1905, through the agency of the Southern Cotton Association, investigations were begun into the Bureau of Cotton Statistics and the charges of corruption fully sustained. Some of the officials resigned and others were promptly dismissed by the head of the Department of Agriculture, Hon. James Wilson. The work accomplished by the association along this line has been of almost inestimable value to the South and the spinning world.

At Asheville, N. C., September 6, 1905, the executive committee of the association met and fixed the minimum price at which the crop produced in 1905 should be sold for by the producers at 11 cents per pound, basis middling, at all interior points. A goodly portion of the crop was sold in September and October at prices slightly under the association figure, but no cotton was offered on the interior markets at less than 10 cents per pound.

This is the first crop in 25 years that has been sold at 10 cents and above by Southern planters. This has also demonstrated the wisdom of co-operation in systematic marketing at prices which must show a profit to the producer. Recently an effort has been made by the association to induce growers and local spot holders to tie up the small balance of the unsold portion of the present crop and demand 15 cents per pound for it. This action has been taken solely in the interest of an effort to average the present short crop as near 12 cents as possible to the producers. The enormous consumption, demand and high prices for cotton goods will easily enable the mills to pay the farmers 12 cents for the entire crop, but unless the balance held is sold at much higher figures than the present market the crop will go to the spinners too cheap from the producers. Farmers who have cotton and local spot holders have gone into the holding movement with great enthusiasm and determination. The situation is absolutely in their own hands, and can be easily controlled by effective co-operation the balance of this season.

Objects and Aims.

Recognizing that cotton is the currency of the South, and that it is also the basis of Southern prosperity, the main object and purpose of the Southern Cotton Association is to safeguard and protect the staple from unduly depressed markets and assist the producers in getting a fair and reasonable profit on its production. The South fully realizes that it now enjoys and will always control a monopoly of the production of raw cotton to clothe the civilized nations of the world. With this knowledge and the present financial ability of the South to finance the crop, the time is ripe for the immediate development of such practical facilities as are necessary to the future handling and marketing of American crops of cotton.

First-class standard-built warehouses are being erected at many interior points, and the demand for better storage facilities is increasing in all sections of the belt. As these warehouses are built the cotton will be stored and guaranteed receipts issued therefor, showing proper weights and grades. These receipts can be used by the growers in securing cheap money as loans or in selling the receipts direct to the exporter or spinner. With better facilities will quickly come a system of better handling. The cotton will be compressed in a neat package at the ginney,

and when shipped at the initial point will go forward on a through bill of lading direct to the mill in far better condition and with less loss for country damage than at present.

Many of the present evils in connection with the primitive methods of handling American cotton will be dispensed with which will work to the advantage of both the producer and the spinner. The Southern Cotton Association will bend its best efforts toward fixing the price of cotton on a stable basis for each crop, showing a profit to both the producer and the spinner, and do all in its power to discourage and limit speculation in cotton, to the end that wide and serious fluctuations in prices may be avoided. In this work the association invites the active co-operation of the spinners. The association hopes to bring about direct trade relations with the spinners as quickly as possible.

The association will encourage diversified agriculture, to the end that each farm may become self-sustaining and that the varied agricultural resources of the South may be properly developed. The association will discourage the present iniquitous credit system and educate the farmers to become depositors in their local banks rather than borrowers. The association will exert its best efforts to broaden the markets for American cotton in foreign

countries, that production may go forward unabated without the fear of underconsumption. The association will encourage the building and maintenance of good schools and first-class public roads throughout the rural districts of the South.

The association will encourage the development of the highest type of Southern manhood and a closer relation and better understanding between Southern farmers and those with whom they have to deal. The supremacy of the South in agricultural, commercial, industrial and financial activities is the keynote of the Southern Cotton Association. It was born in adversity and the necessity of the hour. It will go forward winning new laurels in business and finance, gathering each day in its onward march to the solution of great economic problems renewed strength from the people, and will continue unabated in the enjoyment of a high place in the support and loyal co-operation of the entire people of the South. Its mission is a worthy one in the field of honest endeavor. Its great strength will always be exercised in the defense of the people who give it power, and its energies will never cease until the problems have been fully solved which brought it into existence and its mission worked out in duty well performed.

Atlanta, Ga.

THE ECONOMIC FUTURE OF THE NEGRO.*

By ALFRED HOLT STONE of Mississippi.

This is too broad a subject to be treated comprehensively within the limits of a 30-minute paper. Hence I shall confine myself to what I believe to be the most important factor in any practical consideration of the negro's economic future—the factor of white competition.

I shall not exhaust any part of my time in a discussion of census statistics. Such figures, save in a general way, do not speak for themselves. They must be interpreted. As a result we have a variety of conflicting deductions drawn from the same statistical material. A census volume in some respects resembles the Bible. Each is a repository of truth, and from the one we can fortify almost any economic bias, while from the other we can satisfy any religious opinion we happen to possess. Two courses are open to those interested particularly in this branch of the subject—either to study the mass of data at first hand and work out one's own conclusions, or accept such findings of others as appeal most strongly to one's judgment or predilections. If I can contribute anything whatever of value to this discussion I am persuaded it will be by drawing upon those observations and experiences of common life which, to borrow an idea of Lord Erskine, after all, are themselves of the essence of truth.

At the outset of our speculations upon the future of the negro we are confronted with our ignorance of his present economic status. We are in doubt about even the elementary fact of his present accumulated wealth. And after we have agreed upon such figures, what do they tell us of the stability and rate, or even the extent, of economic progress? In the answer to this question are involved two widely accepted fallacies: First, that the negro began life 40 years ago with nothing but his freedom; second, that the period of his emancipation has been one of marvelous economic achievement. It is easy to prove progress if permitted to take zero as our starting-point and measure of comparison. But if we would know the truth as to where we are, we should at least endeavor

to learn how far we have really come. This means a study of the economic status of the negro in 1865, and this I have time only to briefly touch upon. I merely suggest for your consideration certain facts in this connection tending to disprove the reiterated assertion of the negro's pauperism at the time of his emancipation. We seem to overlook the fact that there were half a million free negroes (487,970) in this country in 1860, distributed throughout practically all the States of the Union. In their ranks were to be found men engaged in nearly every form of industrial enterprise followed by such persons today. Another fact is that the four million (3,953,700) slaves of 1860 occupied in 1865 an apparently impregnable economic position. They furnished a great proportion of the skilled labor of the entire South, and in many parts of it enjoyed an absolute monopoly of this and the field of common labor as well. I wish I had time to offer you some of the evidences on this point, but, of course, that is impossible this morning. It seems to me, then, that if we seek to measure the negro's progress since emancipation by his present property holdings it is incumbent upon us to answer the questions, How much has he accumulated during the last 40 years? and how much had he acquired during the preceding 140?

It is inconceivable that any people who could increase in numbers from 4,500,000 in 1860 to 9,000,000 in 1900 could fail to also increase their property during that period. In discussing as something wonderful this very natural increase we lose sight of factors and considerations which must enter into any estimate of the extent to which such increase means genuine and permanent economic racial progress. How far has such increase been a mere advance along lines of least resistance? In what degree is it indicated by the success of more or less isolated groups under favorable local conditions? How has this acquisition of property kept pace with that of others about them, and how far does it represent only the crumbs from the rich man's table? How great a proportion is held by the exceptional few and how much

distributed among the masses? How much of the total is traceable to the gifts and bequests of white ancestors? To what extent does this increase mean the holding of their own, or actual, positive progress in the face of slowly but steadily increasing white competition? In how far is it attributable to the training and steadying influences of the period of slavery? In what proportions do the older and younger elements of the race, respectively, contribute to the total wealth of the whole? These are some of the considerations which must be taken into account in an estimate of the future based upon something more tangible and stable than a skillful juggling of figures or flatteringly expressed sentiments of good-will.

The greatest asset in possession of the negro of 1865 was the great salient fact that at that time, in the section in which he lived, he was practically without the competition of the white man. Today the most portentous figure that looms upon his economic horizon is that of his white competitor. But even in 1865 he was slowly receding before such competition in the North. To me the most significant utterance at the New York Convention of the National Negro Business League last summer was the note of warning sounded in Mr. Wanamaker's address. He recalled the fact that Philadelphia once had a number of negro business men in whom the local business world took pride. But, he said, "many of them lost their business before they passed away. As an old business man I am speaking the fact; they lost their business because the Swiss, the Germans and others who were American white men did that same business better than they did it. Their color had not the least thing to do with it."

In an address in Brooklyn last summer Mr. Samuel R. Scottron voiced the apprehension of a thoughtful, courageous man, not dazzled by the outer show of the oft-proclaimed "marvelous progress" of his people. At the same time he gave an insight into the economic position of the negro in New York half a century ago. He spoke of what his race had lost to the foreigner, and said that not a negro had left a child "in an enlarged business of the same line." "With all of us," he continued, "the business dies with the fathers. If we were at the top at any time in the past in any line of industry, why are we at the bottom of it today? That's the question." He declared that these changes were not due to color prejudice, and asked that if they were used "as a basis of calculation, what could one say of the future of the American negro?"

From Chicago, Boston, Springfield, places in Kansas, Ohio, Indiana and other States comes the same testimony, in the main from negro witnesses. Mrs. Fannie Barrior Williams strikes the keynote when she explains how the Swedes have taken the janitor service away from the Chicago negro. She says it was by "organizing and training men for the work in such a way as to increase the efficiency and reliability of the service." The American negro must learn the significance of these two words, "efficiency" and "reliability," he expects to save himself from sinking to a condition of economic servitude. Mrs. Williams, too, says that color prejudice is not behind this loss of place by the negro in Chicago. She says the white foreigner has driven the negro out of the barber's trade in the business district, and that the "shoe-polisher has supplanted the negro bootblack, and now does business in finely-appointed parlors with mahogany finish and electric lights." "Thus," she says, "a menial occupation has become a well-organized and genteel business with capital and system behind it."

*A paper read before the American Economic Association, Baltimore, December 29, 1905.

The Rev. Henry J. Callis, a colored minister of Boston, is authority for the statement that today in that city "not a single negro church building is owned by its congregation." This cannot be attributed to color prejudice, but the Bulletin of the Inter-Municipal Committee on Household Research tells us that the latter does operate to the detriment of negroes who seek domestic service in Boston. It relates the experience of a competent butler who was refused employment at 200 places because of his color. The Bulletin adds this comment: "It is not surprising, therefore, that on leaving Boston to return to New York he said: 'These Boston people beat me. They will have mass-meetings and raise money to help Mr. Washington educate the "niggers" down South, but they will let a decent Northerner starve before they will give him a chance to earn an honest living.'"

Dr. Wm. N. DeBerry, pastor of a colored Congregational church in Springfield, Mass., says that 85 per cent. of the colored labor of that city is confined to servile employment "because race prejudice has closed the door of industrial opportunity against these men as a class." He says his study should be "of more than local significance, inasmuch as the situation here in Springfield is fairly typical of the black man's condition throughout the North."

Probably no man in America appreciates more keenly than Booker T. Washington the vital necessity to the negro of maintaining his Southern economic position. "In many respects," he says, "the next 20 years are going to be the most serious in the history of the race. Within this period it will be largely decided whether the negro is going to be able to retain the hold which he now has upon the industries of the South or whether his place will be filled by white people from a distance."

If we may predict anything whatever of the negro's future, it seems safe to lay down the elementary proposition that the home of the masses must remain in the Southern States. But in the South also they have already begun to lose ground industrially. Mr. Washington frankly says that "nowhere in the South is the negro as strong in skilled labor as he was 20 years ago." This is re-enforced by the conservative conclusion of the ablest living authority on negro statistics, Prof. Walter F. Willcox, that for the decade ending in 1900 "in the competition with white labor to which the negro is being subjected he has not quite held his own." The field of his activities thus becomes doubly circumscribed, and we realize the force of Mr. Washington's expressed conviction that the salvation of his race "will largely rest upon its ability and willingness to secure and cultivate properly the soil." Here is sharply accentuated the critical importance to the negro of the question of possible competition at home. Mr. Washington does not think his people fitted to survive the foreign competition of Northern cities. Let us see if we have any data upon which to base an opinion as to the probable outcome of such competition in the field of Southern agriculture, should the negro be subjected to it. The foreign element has not made itself felt thus far in this field, yet already the white man is gaining on the negro. According to Professor Willcox, by far the most important occupations for negroes are agricultural labor, farmers, planters and overseers, and laborers not specified. Two-thirds of all the negro breadwinners are to be found in these three lines of work. According to the same authority, the negroes so engaged increased between 1890 and 1900 by 30.4 per cent., while the

Southern whites in the same occupations increased by 43.5 per cent. As a result, while the negroes constituted in 1890 44.4 per cent. of the population in such occupations, in 1900 they constituted but 42 per cent.

But in this paper I have particularly in mind, as the possible future Southern competitors of the negro, the very people who have driven him out of so many occupations in the North—Italians. Hence I have been to considerable pains to investigate personally the efficiency and general economic condition of the largest group of cotton-growing Italians of which I have any knowledge. This is at Sunny Side, Arkansas.

The present operators of this property are practical cotton planters and business men. When they assumed its control, in 1898, they knew nothing whatever about the Italian farmer. They merely accepted such labor as they found already on hand. This consisted of 38 families of Italians, with 200 working hands, and 203 negro families, with 600 working hands. The Italians cultivated 1200 acres of cotton and the negroes 2600. At the end of 1905, eight years later, the Italians number 107 squads, with 500 working hands, while the negroes have fallen to the Italians' place in 1898, 38 squads, with 175 working hands. The cotton acreage has increased to 3000 acres, of which the negroes cultivate 900 and the Italians 3000. This bare statement of numerical loss and gain is of itself pregnant with meaning. It becomes doubly significant when we analyze the operations of the period under consideration. Beyond the number of hands and acreage the details for 1898 are not available. As the current business year is not yet closed, I eliminate it also. This gives us a six-year period for a comparative exhibit of the showing of the two classes of labor, working literally side by side, their land indiscriminately allotted, each on the same tenure, each under the same conditions of soil, climate and business detail. I have time to consider only the salient features of these operations, and to render the figures more readily grasped in reading I have reduced them to annual averages.

This gives us the following results: Average number of squads—Italians 52, negroes 167; average number of working hands—Italians 269, negroes 433; average acreage per hand—Italians 6.2, negroes 5.1; average pounds of lint per hand—Italians 2584, negroes 1174; average pounds of lint per acre—Italians 403, negroes 233; average cash product value per hand—Italians \$277.36, negroes \$128.47; average cash product value per acre—Italians \$44.77, negroes \$26.36. The Italian's annual average lint production per hand exceeded the negro's by 1410 pounds, while his yield per acre was greater by 170 pounds. The difference in money value in favor of the Italian was \$148.80 per hand and \$18.41 per acre. The Italian cultivated an average of 1.1 acres more per hand than the negro.

But notwithstanding the difference between these two groups in point of efficiency—a difference which is no longer a matter of controversy where the two are practically known—the vital difference, for our consideration, is to be found in the story which each has to tell at the end of the year. To put it bluntly and coldly it is, for the negro, a recital of conditions and traits and habits as old as his freedom: too much time spent out of his crop; too much waiting for the weather to improve; too much putting off to a more convenient season; a too constant and too successful besieging of those in authority for money accommodations and supplies; too little reckoning against the future day of settlement; too much "leaning on

the Lord" and too little upon himself in things not spiritual; too much living for today and not enough for tomorrow. With the Italian it seems to be simply a grim determination to have more at the end of this year than he had at the end of last, regardless of wind or weather; to wrest from every foot of soil he rents all that nature can be forced to yield; to get a visible, tangible return for every dime and hour he spends; to live on less than he makes, whether the latter be much or little; to hire nothing done that he can possibly do himself; to keep the future ever in mind, and to lay by a store against age and a rainy day.

Expressed in figures the narrative possesses a meaning more significant than we get from words. Of the 110 Italian squads that started to work at the beginning of the current year, 44 were new arrivals. Yet of the total number 65 squads, or 59 per cent., contracted no debts for supplies during 1905; that is to say, practically all who made crops in 1904 were independent this year. Of the 61 negro squads that began crops this year, only 2, or 3.2 per cent. of the whole, were independent. This situation may be understood when we know that back of it lies the fact that the total cash balances above accounts paid the 66 Italian squads in 1904 amounted to the sum of \$38,764.58, an average of \$587.35 per squad. The number of negro squads in 1904 was the same as the number of Italians at the beginning of 1905, namely, 110. Of these, 2 drew balances amounting to \$480.50, while the firm had on its books at the end of the year the sum of \$6456.20 in negro balances due. (I have a friend, operating on a much smaller scale, who last year charged off to profit and loss \$4300 due him by the negroes on his place.)

Take another illustration of what these operations have meant for the two races: There are 107 Italian squads at the end of 1905. One hundred and four of these own 123 head of work stock, which, with other live-stock, such as cattle, sheep and hogs, represent a money value of \$23,400. Only three squads have no stock of any kind. Of the 38 negro squads on the place at the close of this year, 21 own work and live stock to the value of \$3360, while 17 own no stock at all. This indicates not only a failure to take proper advantage of their opportunities upon the part of the negroes as a whole, but a grossly unequal distribution of property as well. Of 107 Italians, but 2.8 per cent. have no share in the general wealth; of 38 negroes, 44.7 per cent. have no such share.

But while all this may indicate a condition of much promise for the Italian farmer in the South, wherein, it may be asked, lies the advantage to the landowner over the negro tenant system? This question is pertinent, for in its ultimate answer will be found the key to the attitude of the employer of agricultural labor toward the question of foreign immigration to the Southern States. Without touching the broader aspect of the question—the advantage to the general welfare of efficient over inefficient labor—I should answer specifically by suggesting three points of superiority for the Italian: First, I would put a permanent and assured tenantry; second, thorough and careful cultivation of the soil, without the necessity for an almost paternalistic supervision of the labor; third, following as a natural sequence to the other two, greater safety and larger freedom from losses in furnishing, and, ultimately, the employing of a smaller operating capital.

As a cotton planter, the greatest fault I find with negro labor is not its improvidence or shiftlessness. Certainly these are a source of annoyance to the planter, but they much more vitally concern the negro

himself. They constitute the handicap which, unless removed, will cause him to lose the race to the foreigner. But the planter's greatest trouble arises out of the negro's unreliability—the fact that he cannot be depended on to be governed by considerations of self-interest; that he changes his habitation in response to the most trifling and whimsical suggestions, and frequently for no reason at all; that out of any group of plantation families we never know toward the close of one year upon how many we may depend for the next, regardless of what they tell us, nor how many will carry through a crop after they have contracted to do so.

Here again we may draw on Sunny Side for an instructive comparison: 110 Italian squads began crops in 1905, and 107 carried them through; one left because of sickness, one ran off and one was made to leave. 61 negro squads began the year, and 38 went through; 17 "turned back" their crops and six ran off. Of the Italians, 97.2 per cent. stayed through the year; of the negroes, 62.2 per cent.

Whereas with the negro we have the constant difficulty I have mentioned, of not knowing with certainty at the end of one year whose places will have to be filled for another, with the Italians the reverse is true. They come up of their own volition during August and September and arrange their affairs for the following season. And so quickly do they become wedded to a particular allotment of land they are rarely willing to change. When they do it must be clearly to their interest to make the move. A few have returned to Italy, but a year before their departure they arranged to have their land taken by some relatives, and thus retained it in the family. The opportunity which the negro yearly casts to the winds of improvidence the Italian embraces as something too valuable to fritter away. There is nothing new about any of these traits. This Italian group has been built up largely through additions brought over by those on the ground from year to year. Possibly they may be above the average of their class, but I have no reason to think so. Certainly these negroes are not below the average of theirs. The statement of the characteristics exhibited by these Italians might be received with incredulity by a man accustomed all his life to negro labor. But this would be due to ignorance on his part. They are as old as the metayers of Lombardy, Piedmont and Tuscany themselves, those frugal and industrious peasants who made the valley of the Arno one of the garden spots of the world. I wish I could read you a description of these people at home, as quoted by John Stuart Mill from Arthur Young, Chateaubriand and Sismondi. I commend the chapter on metayers in Mill's first volume to anyone interested in the subject we are discussing.

I have quoted Mr. Washington's opinion that he did not believe the masses of his people fitted to face the foreign competition of Northern cities. There the result of such competition has turned mainly upon the three considerations of efficiency, reliability and thrift, with some account to be taken of the effect of Northern economic race prejudice, if I may use the expression. The latter we may safely eliminate, at least for the present, from a consideration of such a contest in the South. But what of the other factors? Have we any grounds for assuming that they would be any less potent here than there in turning the scales against the negro? I believe, indeed, that they would count even more heavily against him.

I hold no brief for the Italian. My interest in the subject, in so far as he is concerned, is now, as it has always been, solely a matter of abstract economics.

There is not a white laborer of any nationality on Dunleith plantation, nor will there be until he is forced upon us by the negro himself. The negro's ancestors and mine landed on these shores close to each other, both in time and place, the one in Virginia, the other in Maryland. For more than 250 years we have lived together in peace, and for these people I have none but kindly feelings. It is my sole purpose to point out the truth as I see it, to sound a note of timely warning, not to indulge in reproach or abuse. I do not believe it will ever come to me to do them a greater service than now, if only my voice could reach them, by telling them that here is the only key to the safety of their future economic position: It lies in arresting the growing agitation throughout the South of the movement for foreign immigration by removing its cause. I believe the negro still has it in his power to do this, at least in large measure, by making of himself an efficient and dependable factor in the economic life of the South. I believe he can do this, but will he? It would mean a revolution in the present social and industrial life and habits of the masses. To me the outlook for such a course does not seem encouraging.

But in a broader view even this would be but temporary—a mere postponing of the inevitable. This life of ours is, and is likely always to remain, a ceaseless struggle for supremacy between nations and races and individuals. Heretofore he has been largely shielded by conditions, partly economic and partly geographic, but it would be unwise for the negro to cherish the delusion that he alone of all mankind is to remain forever exempt from such a contest. Nothing is more surely written in the book of fate than that he will have to meet it soon or late. I have never indulged in dogmatic assertions about the present of the negro, and I shall certainly not begin with a dogmatic prediction as to his future. I have merely tried to indicate some of the factors and results of such a contest as they have already been wrought out in a sort of mimic warfare. Is any man, qualified to speak by familiarity with the negro masses, prepared to promise that in a larger field, upon a broader stage, the end of the struggle would not be the same?

It will be a slow process of attrition, this working out of the results of competition. It will not mean the extinction of the negro as an economic factor. It seems to me that its effect will be merely to submerge the incompetent mass, and elevate in that very process the few who can weather the storm. In its last analysis it will be his own, not the white man's hand, that closes in the negro's face the door of economic hope, for only he can keep it open. If the story of the fate of the old-time business negro of New York and Philadelphia in the years to come shall be related of the negro agriculturist of the South, it will be for the latter but a final reaping of the fruits of Ephraim's ancient curse: "Unstable as water, thou shalt not excel."

In the larger sense there is another aspect of the negro's life that must be considered in attempting to estimate his future. I may say it is even the first great problem of this people. It is the problem of the moral elevation of the masses, whose status will at last determine that of the race as a whole. Mr. Lecky has given us his opinion as to the causes of the real "prosperity" of nations. It is one which the American negro may not unprofitably take to heart, for it applies to races as well as nations, to black as well as white. "Its foundation," he says, "is laid in pure domestic life, in commercial integrity, in a high standard of moral worth and of

public spirit, in simple habits, in courage, uprightness and a certain soundness and moderation of judgment which springs quite as much from character as from intellect."

The negro has often demanded another standard than that of race as a measure of his capacity and value as a people. Here is one, severe, possibly, but fair: The extent to which the race as a whole shall prove its ability to lay the foundation of "a pure domestic life," and erect thereon a superstructure of character and moral worth. If it shall establish the capacity of its masses to meet this test, then it will have proved its title to a place among the superior races of the earth, and this regardless of your opinion or of mine, or of that of our fathers before us. But though it were ten thousand times richer than it is today, and overflowed the land in numbers, and filled all offices of profit, if it fail in this supreme criterion it will still be an inferior race. The greatness of England and Germany and America does not consist of material things alone, nor of the brilliant achievements of their "talented tenths." It is rather to be discovered in the character of the home life of their great average classes—the masses of their people. It is the latter which makes possible and assures the former, and there is no shorter, easier road for the negro than for the white man. Then the current measure of the real progress of the race is to be found in the extent to which the characteristics of one or the other of its two extremes—its highest or its lowest class—are most impressed upon the mass. It is not alone in the possession of houses that the foundations of prosperity, as Mr. Lecky defines it, are laid, nor in their possession alone that racial advance is indicated. It is rather in the extent to which these houses possess for their owners the true significance of homes. This test is sound, but difficult of certain application. It is easier to enumerate the houses of a people than it is to count their homes.

THE PRICE OF COTTON.

One View of It From the Manufacturing Standpoint.

The Grantville Hosiery Mills of Grantville, Ga., writes to the MANUFACTURERS' RECORD as follows:

"We have already installed machinery in our yarn mill which we are operating in conjunction with our present hosiery mill. Three thousand spindles were installed, and the hosiery mill will use its total output. The capital stock of the hosiery plant was increased from \$52,500 to \$150,000 for the purpose of erecting the yarn plant, and it is equipped throughout with the latest machinery and erected according to most modern methods of construction. On account of the great disparity between the price of cotton and yarn, which has been existing for some time, we think that the yarn mill will be a profitable addition to our plant, enabling us to meet competition with the many other hosiery plants that are making their own yarns.

"Owing to the increasing demand for our hosiery it became necessary for us to increase our production 50 per cent. We have recently installed 50 new knitting machines, and we are now making 1500 dozen pairs per day.

"This past year has been a very prosperous one to us, and to the knit-goods industry in general. Never before have we seen such a demand for goods, and never were we so far behind with orders. It is indeed a pleasing contrast to the previous year, 1904, when the price of cotton was carried all out of reason, mills were running on short time, many shut down and goods selling at figures so incommensurate with the price of the raw material.

"The outlook for 1906, however, is rather gloomy just now. All indications point to a short yield of cotton, and prices have already been forced to the 12-cent mark. The remainder of the crop is now in the hands of those who are able to hold it, and we are now witnessing one of the greatest combines that ever appeared on the face of the globe. The farmers, aided by the speculators, who are ever eager to take advantage of a short yield, will in all probability carry prices to the same level that they did in 1904. The high prices now prevailing are making it very inducive for the operatives to leave the mill and go to the farms, and the scarcity of laborers is the cry that we hear all over the country. With a scarcity of laborers, which means small production and high prices for cotton, we hardly expect to see the prosperity in 1906 among the mills as has been the case during the past year."

The Cement Users' Convention.

The Milwaukee (Wis.) branch of the National Association of Cement Users had made extensive plans and arrangements for the exhibit at the convention of the National Association, and when the announcement was made that the National Association of Cement Users had decided to hold the convention at Columbus, Ohio, on account of the destruction by fire of the building originally selected for the exhibit of the association the Milwaukee branch decided to hold an independent convention and gave due notice to the National Association to that effect.

This fact has again changed the plans of the National Association, and at a meeting of the executive committee held in Philadelphia on December 23 it was decided to return to the original plan, viz., that of holding the convention at Milwaukee, and on the dates originally specified, from the 9th to the 12th of January, inclusive.

The National Association has the assurance of the Milwaukee branch that adequate quarters have been secured and all plans will stand as originally specified.

Steel Plant for Washington.

The MANUFACTURERS' RECORD has received authoritative advices regarding the steel plant which the Firth-Sterling Steel Co. of Pittsburgh, Pa., has been reported as to build at Washington, D. C. The company sells large amounts of material to the War Department of the government, and the plant to be located in Washington will assist in meeting that demand. A site of about 25 acres on the Potomac river will be occupied, and there will be erected a 125x300-foot building and a 75x150-foot building, together with several smaller structures, all of substantial steel structure frames and brick walls. A modern equipment of machinery will be installed and the product will be armor-piercing projectiles. Capacity and number of men to be employed cannot be stated as yet. J. R. Rose is the construction engineer in charge, and proposals for material are now being received. The Firth-Sterling Steel Co. was organized in 1855, and it has a large tool-steel and armor-projectile plant at Demmler, Pa. Its offices are at Pittsburgh, and Lewis J. Firth is president.

To Build Warehouses.

Reports state that the Pittsburgh Steel Co. of Pittsburgh, Pa., will erect large branch warehouses at Louisville, Ky., Memphis, Tenn., and New Orleans, La., for the purpose of increasing its facilities to distribute nails, wire and other products to Southern and Southwestern points. The company is reported also as intending to build and operate a boat line for its own use. Regarding the project, dis-

patches from Memphis state that the establishment of the warehouses and boat line will give that city an advantage over inland cities in the matter of freight rates and will enable it to better compete with other markets favored by the railroads.

An American Merchant Marine.

Editor Manufacturers' Record:

With but 24 deep-water seaports upon all our coasts of channel depths 25 feet and upward; with 12 of these on the Atlantic and Gulf coasts south of Baltimore, with no possibility of the creation of more than nine such additional ports with any thinkable expenditure of government or other money, and if created five on such Southern coasts with these 12 Southern ports nearer to more of the world's commerce than any others, infinitely nearer South and Central American and West Indian commerce, destined to be nearer the commerce of the Far East with the completion of the Panama canal; with the revival of our merchant marine in the hands of a non-partisan commission; with a most thorough hearing of the whole subject-matter in every important port by this commission; with a bill framed and before Congress which seems to overcome objection to previous bills; with the certainty that Southern senators and representatives who vote for it will have ample precedent in the action of some of the ablest men who ever represented the South in the national legislature, may it not be hoped that this great question may be taken out of party in the domain of pure patriotism and the humiliating spectacle of foreign flags on 90 per cent. of the ships that carry our freights be changed to the placing of 90 per cent. of American ships built with American brain and brawn and material in our freight service, Old Glory and her captains missionaries of trade in all the seaports of the world?

Brunswick, Ga. C. P. GOODYEAR.

Interested in the South's Exposition.

J. H. Stone, manager Nonpareil Cork Works, New York city, writes to the MANUFACTURERS' RECORD as follows:

"We would say regarding the advisability of holding a Southern industrial exposition in 1910 that, in our judgment, such an exposition, if run on conservative lines, so far as expenditure is concerned, and with the prime object kept clearly and continuously in view, would be a great success and a most desirable thing to do. We have had 'world's fairs' sufficient and to spare, in our judgment, but not enough of industrial expositions run as a means of clearly showing the whole country the needs, achievements and possibilities of the special section in which they are held. We should personally be very much interested in a Southern exposition along these lines, and, properly managed, would have entire confidence in its success from all points of view."

To Induce Chaos in Railroad.

W. W. Kent, general manager Chattanooga Southern Railroad Co., Chattanooga, Tenn., writes to the MANUFACTURERS' RECORD as follows:

"If the present furore about railroad rates and control results in a law that will place the rate-making power in the hands of a commission at Washington it will certainly result in the most chaotic condition that has ever existed since the transportation lines were constructed, for as you know it is a great task for a number of men to adjust rates satisfactorily for one railroad, and it would be an impossibility for five or six men to supervise the rates of more than 210,000 miles of railroad. I do not anticipate, however, that there will be any such radical measure adopted."

New and Wonderful Ore Discovery in Alabama.

By THOMAS P. GRANTY.

[Written for the Manufacturers' Record.]

"We would seem to be within little more than half a century of an absolute iron famine. * * * This fact raises problems of serious consequence to the world's

not thoroughly familiar with conditions as unduly alarming. In the same editorial, which is entitled "The World's Iron-Ore Resources," Mr. Jeans says:

nized as a possession of such infinite and unapproached value that none can be purchased from foreign countries."

Then dealing with a recent estimate put out by a Swedish writer of an available ore supply for the world of 10,000,000,000 tons, or enough at the present rate of consumption to last 100 years, the *Iron and Coal Trades Review* points out that consumption is increasing so rapidly "that

that is really alarming. The iron ores of the future, so far as they can be estimated, are not likely to permit of the same economical production of pig-iron as the ores of the past. The present conditions on the Lake Superior iron-ore ranges in the United States, in the West Cumberland district at home, in the Bilbao region in Spain, in Algeria, in Elba and in other



END OF JENKS MOUNTAIN FROM TIPPLE OF GRAY ORE IRON CO.

iron industry and to the outlook of civilization itself."

Such are the startling statements made in its leading editorial of December 15 by England's foremost metallurgical journal, the *Iron and Coal Trades Review*, whose

"The question how far the ascertained iron resources of the world are likely to prove adequate to the maintenance of the world's increasing demands for iron and steel is one of the most important and interesting that can engage attention from

40 years would likely see the present consumption more than doubled," and then adds the opening sentence of this article: "In other words, we would seem to be within little more than half a century of an absolute iron famine."

centers whence imported supplies have been mainly drawn, all forbid the expectation that the future supplies of ore will be as cheap and as abundant as those hitherto available. This fact raises problems of serious consequence to the world's iron



FACE OF ORE UPPER LEFT EAST SIDE OF OPEN CUT—GRAY ORE IRON CO.

editor, J. Stephen Jeans, is secretary of the British Iron Trade Association. Coming from a man less widely recognized as one of the world's greatest and most conservative iron authorities, the editorial from which the quoted lines are taken would be regarded by the average reader

the point of view of general trade and commerce. Iron being the daily bread of industry, this becomes a matter of urgent and constant concern, not to one industry or to one nation only, but to all industries and all nations almost alike. The time may come when iron ores will be recog-

"This," says the same article, "is no doubt a sufficiently serious prospect, but it is not now proclaimed for the first time. Again and again attention has been called to the fact that the world's iron ores were being rapidly depleted. The world's best supplies are being exhausted at a rate

industry and to the outlook of civilization itself."

According to the *Iron and Coal Trades Review*, it has been computed that from the beginning "up to the end of 1904 the world's consumption of iron ores had aggregated 1,100,000,000 tons," whereas "the

total computed consumption of iron ores in the past would only be equal to 11 years' consumption at the rate of today, and that rate is not only rapidly increasing, but is likely to continue to increase at an accelerated pace."

quarry in a mountain would be operated, giving advantages in the way of cheap mining such as have never been seen before in the South. Possibly the most important present feature of this discovery is the fact that it removes all the anxiety,

of which as a mixture with the fossil ores of Red Mountain has been demonstrated not merely by chemical analyses made in laboratories, but by continuous tests, extending through several years, in furnaces at Ironaton and at Gadsden. Not only has

there is not a single share of the stock of the company owning the vast body of gray ores thus far developed now for sale or liable to be for sale until the steel and iron public comes to a broader realization of its merits. It is, however, safe to say that every ironmaster will soon know what this new factor in Alabama's resources signifies to that State's economic prestige in the production of iron and steel and the commodities into which these are, in turn, convertible; in fact, this article is being written without the consent and against the wishes of the "powers that be" in the ownership of this enormous new resource.

The Gray Ore Iron Co. owns four miles of a mountain which in several places is unquestionably made up for the most part of a solid mass of ore. This mountain is cut in two by two creeks. The northernmost is called Eumawhee; the southernmost the Tallaseehatchie. They are here about a mile apart, and come together two miles below.

Stripping at various places across this mountain shows the ore in solid mass on either side and across the mountain's top. At one place the vein, or a combination of several veins compressed together, is shown to be as much as 130 feet in thickness, with only a few superficial partings, which, it is believed by experienced miners, will disappear a few feet from the surface, since some of these partings have already been proven to be narrowing as parts of this huge vein are mined.

In order to give the reader a clearer conception of the extent of the ore in sight at one of the Gray Ore Iron Co.'s operations (as yet in little more than the exploitive stage of its capacity), I had a number of photographs taken, some of which will illustrate what I am now writing. These were secured not only for the purpose of illustrating, but in order to forestall the inevitable incredulity that



60-FOOT EXPOSURE OF VEIN OF SOLID ORE—GRAY ORE IRON CO.

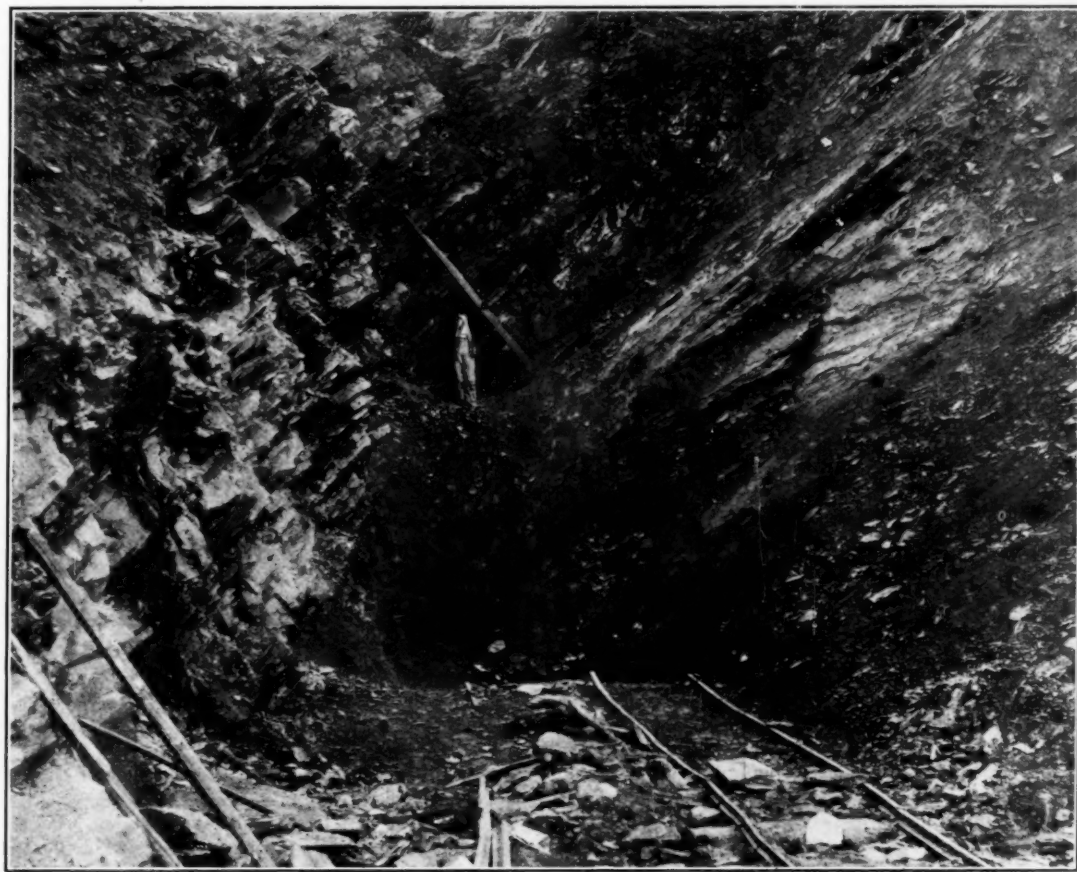
Then reviewing the possibility of the well-known iron districts of today having a larger supply than they are credited with and of the United States having "very many deposits of iron ore that are still untouched," this, one of the most suggestive articles which I have ever read on this subject, in closing says:

"In any case, it is clear that the next 50 years will witness more or less revolutionary changes in the conditions of the world's iron-ore supply, and within the next 10 years those conditions may become profoundly modified."

In the light of such a discussion of the world's iron-ore supply—a question which is daily forcing itself upon the attention of iron and steel men and capitalists generally—it indeed becomes of world-wide interest to be able to state, based on three or four years of exploration work, that a new source of supply promising to furnish certainly 300,000,000 tons of ore has been proved out in Alabama by the work of one company, which, it is believed, can conservatively claim that it owns that much ore, and possibly more. As astonishing as this statement is, investigation will, I am sure, prove its correctness. This company is the Gray Ore Iron Co., which is owned by Col. T. G. Bush of Birmingham, the Shelby Iron Co., of which Colonel Bush is president, and Douglas H. Gordon and William C. Seddon of Baltimore and two other Baltimore gentlemen. Tempting offers have been made for this property, but the owners, realizing something of its enormous value, have persistently refused to sell. There can hardly be less than an average of 30 feet of this gray ore throughout the company's four miles of outcrop and susceptible of profitable mining, which it is believed by some good authorities gives to this one company as much ore as all the leading iron companies of the State now own in Red Mountain in the Birmingham district. A large percentage of the enormous tonnage owned by this company is above water-level, and is being worked with a face of from 50 to 150 feet high, just as a rock

which was becoming more or less acute, concerning the need in the future of brown ore for a mixture with the red ores of this State, since the supply of brown ore is somewhat problematical.

the utility of these gray ores been proven as elements in the economical production of thousands of tons of pig-iron, but the quality and grade of pig made with a mixture consisting of more than one-half gray



WIDTH OF NO. 1 VEIN IN CUT ON EAST SIDE—GRAY ORE IRON CO.

All possible danger to the iron industry of the State by any increasing scarcity of brown ore in Alabama has been solved by this discovery in Talladega county of hundreds of millions of tons of what is known as "gray ore," the utility

ore has been demonstrated by every class of consumer who buys Alabama iron. These statements are made on the testimony of iron men, and not on the mere say-so of optimistic promoters, and are entitled to the greater credence because

would otherwise attach to allegations so surprising as I am making in this incomplete description. One of these shows a 27-foot vein. There is nowhere else in the State or in the South a stratified deposit of uniform iron ore of even approxi-

mate thickness whose percentage of metallic iron is comparable to that of this gigantic ore body of which even the local ironmasters here in Alabama will get their first real conception when they see a reproduction of its photograph. But this one vein of 27 feet is surpassed by the exposures on the east side of the mountain represented by the three pictures of open-cut work—one of the upper left, one of the lower and the third of the two together—on a vein that is nearly 60 feet in thickness. The 27-foot vein is geologically near the bottom of the 130 feet of ore body above mentioned, while the

strated at Tallaseehatchie creek or at Mesaba Switch, as the Louisville & Nashville officials have designated it, then there are minable on a mile "slope" within this property (counting 12 cubic feet to the ton) more than 200,000,000 tons of ore, which no one now questions will average in the furnace over 40 per cent. metallic iron, though really the safe average so far indicated by the work of development is 45 per cent., a considerable amount showing very much higher percentage of metallic iron than this.

But this mile and a-half is only the southwest end of the Gray Ore Iron Co.'s

this great deposit. They constitute mine No. 2, which is just beginning to be brought into shape for a large and inexpensive output of ore. The first work on this gray-ore lead (and its relation to the work last done is important) was begun where Eumawhee creek cuts into the mountain. Here there was exposed a vein six feet wide, the uniformity and persistence of which it was considered worth while to ascertain before undertaking any very large operations on the property. It was wisely argued that if a slope should be driven 300 or 400 feet down the dip of this six feet wide vein—which

resulted merely in thoroughly proving what it was intended that this operation should prove. However, as there are other good veins of iron ore as thick as this and as high in iron, nothing very wonderful, considering this operation by itself, was developed.

But right here was the hidden milk in the cocoanut. It was known that there were indications of incomparably larger deposits on the property, and it was a logical conclusion that if one of the veins—the one which, as it happened, was most accessible from the railroad—should be found to conform to the requirements of continuously profitable mining, then there would follow justification for the additional outlays necessary for larger operations. Among these outlays was the cost of building a branch railroad, and the approach to the exposures lying south of Tallaseehatchie creek was a more costly proposition than the switch to mine No. 1 on Eumawhee. And thus the real importance of these deposits was not conclusively demonstrated until the larger measures became accessible to transportation and until enough stripping and open-face work had been done on the big exposure to prove its "tricks and its manners" both in the ground and in the furnace. Important as are chemical analyses made in laboratories, it is the furnace that tells the final tale of commercial value. Thus the work may be considered experimental until about the first of last September.

The acquisition and development of the property has been in the hands of the ultra-conservative and cautiously thorough president of the Alabama Consolidated Coal & Iron Co., Col. T. G. Bush, who is also the president of the Shelby Iron Co., two concerns owning furnace plants within a short distance of these gray-ore deposits. It was in keeping with Colonel Bush's characteristic business methods to make sure of his ground before committing himself to a reliance on any source of ore supply either for plants under his control or for the general market until that ore supply should first be tested in every way conceivable as to its quantity and quality, and, what was of equal moment, as to the feasibility of mining it and transporting it at a cost well within the figures which the furnace owner could afford to pay for it.

Until all this had been demonstrated to his own satisfaction it was impossible to elicit from Colonel Bush any positive expression of opinion concerning the value and fitness of this new candidate for furnace favor in the Alabama field. Intimations and rumors about it occasionally drifted into Birmingham newspaper offices, causing reportorial inquiries at the office of the president of the Gray Ore Iron Co., but without other response than that he had nothing yet "to give out" for publication. If, however, a Birmingham scribe had happened to run down to where Tallaseehatchie creek cuts through the Gray Ore property he would have seen enough, as early as the middle of November, to have anticipated this story, and might have so made my journey from Baltimore to Alabama a trip for my health alone.

On November 15 a reporter might have seen ores enough to fill nine cars (which, as was afterwards proven at the furnace, averaged in metallic iron more than 42 per cent.) taken from the outer edges of the operations shown in the accompanying pictures, and he might have heard the mine "bosses" urging the handlers of picks and shovels "to keep a move on," since the Gadsden furnace alone wanted more than had been going to Gadsden and Ironaton. He might have seen by staying the week out that each day's work uncovered enormous ore masses at one place and at another showed that each superficial foot



LOWER LEFT WEST SIDE OF OPEN CUT SHOWING 27-FOOT VEIN SOLID ORE—GRAY ORE IRON CO.

larger vein (60 feet), on which the open-face work is being done in two lifts (one above the other), is nearer the top of that great measure, which here dips in an easterly direction under the lands of this company for nearly a mile, and from the combined evidence of visible outcrops, "float" and several extensive openings cut through the soil down to the ore, belting the mountain from one side to the other, there is not less than a mile and a-half southwestwardly of the proven outcrop of this enormous deposit. If we assume that it shall maintain throughout this distance only one-half of the thickness demon-

four miles of iron ore, outcropping in the mountain all the way from Sycamore to a point within two miles of where the Louisville & Nashville's Mineral Branch and the Central of Georgia cross at Sylacauga.

The operations at Tallaseehatchie creek, which are shown in the photographs accompanying this necessarily inadequate description of a newly-developed resource of such far-reaching importance in the industrial potential of the State of Alabama—these operations, showing such immensity, though most recent, are not the only developments that have been made in

many consider the ideal width for underground work—and the ore should prove to be uniform in quantity and quality, it would then be soon enough to develop the larger prospects to the northward as well as to the southwest.* Therefore the first year's work done by the Gray Ore Iron Co. was rather for the purpose of proving value than for realizing profit. And so (as goes without saying) the development work at mine No. 1—where the six-foot vein was first tested both as to persistency, uniformity and fitness for the furnace—

*The mountain turns westwardly a short distance south of Tallaseehatchie creek.

blasted from off the face of the ore in sight was identical with every other foot taken from the two lifts where the 60-foot vein was being proven out, and he might have gone southwardly 400 feet and walked from the west side of the mountain across the top to the east side on what is virtually a bed of solid ore brought in plain view by a shallow ditch belting the mountain; and he might have walked 100 or so yards further and done the same thing, and thence a quarter of a mile and found outcrop all the way with heavy "float" on the sides of the mountain, till he reached another unfinished ditch, where on the west side of the mountain the same conditions existing at the first opening are shown to continue.

But there will be much left to be seen and told by journalistic visitors who may hereafter come to this extraordinary upheaval which has assembled such rich and massive strata of ore as to cause the observer almost to doubt the testimony of his senses. The very exploitation of the contents of this property is so far hardly begun. During my stay in this vicinity there came a graduate geological student of Johns Hopkins University and a graduate of Syracuse University, New York, who made a careful study of geological conditions in this section from a scientific point of view. There have, moreover, been examinations of the geology of the district by a number of experts.

The immensity of the ore shown by the new workings at "Mesaba Switch," just south of Tallaseehatchie creek, is so impressively extraordinary as to almost blind the observer to every ordinary feature of the property. For instance, I came very near forgetting to look for or inquire about the six-foot vein first opened, and which might naturally be expected to show itself where the Tallaseehatchie cuts the mountain. It is here sure enough, in plain view in the creek bed, but has widened in the mile between the two creeks. It is shown in one of the photographs along the side of the railroad where a piece of scantling laid across the strike measured 12 feet. It appears again in one of the large cuts of the work beyond the tippie and on the same level. There it is only about 10 feet. This vein seems to maintain the general direction of its outcrop to the east of the great conglomerate of ore bodies exposed southward. Nor should it be concluded, on account of the monopoly of attention which the prodigious strata south of the Tallaseehatchie compels, that there is no gray ore of consequence north of the first mine opened on Eumawhee. There are many indications of larger strata—thicker veins—all the way to the northern line of the company's lands. This end of the tract may, I am satisfied, in itself constitute the source of production for a very large tonnage. At no point does it appear that the vein grows thinner than at "mine No. 1," while analyses of float ore show a continuation of the percentages in the ores there found.

A State industrial convention representing all commercial organizations of the State, as well as all industrial interests of Arkansas, will probably be held in Little Rock some time during the coming spring. The matter is under consideration by the officers of the Little Rock Board of Trade, and while the arrangements are as yet only in the preliminary stage, it is expected the plans will assume definite shape within a short time.

Charters granted at Chattanooga last year represented capital stock aggregating \$7,319,900, the largest capital being that of the Chattanooga & Tennessee River Power Co., \$3,000,000, which was afterward increased to \$3,500,000.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS' RECORD. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

NEW SOUTHERN SPINDLES.

More Than 430,000 Additions Announced in the Past 12 Months.

During 1905 plans were announced for the addition to Southern cotton-mill equip-

Alabama.			
Name.	Location.	Spindles.	Looms
*Athens Cotton Mill Co.	Athens.	2,500	...
*Ide Cotton Mills.	Jacksonville.	5,000	...
Georgia.			
*Mallison Braided Cord Co.	Athens.	5,000	...
*Swift Mfg. Co.	Columbus.	5,000	...
*Central Mills.	Griffin.	7,500	...
*Elm City Cotton Mills.	Lagrange.	5,000	...
E. B. Thompson, President.	Watkinsville.	5,000	...
Mississippi.			
*Laurel Cotton Mills.	Laurel.	8,500	...
North Carolina.			
Clara Mfg. Co.	Charlotte.	5,000	...
Excelsior Cotton Mills (carding).	Charlotte.	2,000	...
*Magnolia Mills.	Charlotte.	2,000	...
South Atlantic Waste Co.	Charlotte.
Iccanoree Cotton Mills.	Monroe.
*Monroe Cotton Mills.	Monroe.	150	...
Woodlawn Cotton Mills.	Mt. Holly.	5,000	...
American Thread Co.	Spray.	5,000	...
American Yarn Co.	Spray.
Imperial Co.	Spray.
South Carolina.			
Jackson Mills.	Iva.	21,000	650
*Marion Mfg. Co.	Marion.	2,000	...
Texas.			
*Waxahatchie Cotton Mills.	Waxahatchie.	5,000	150
Virginia.			
*Dan River Power & Mfg. Co.	Danville.	43,000	1614
Totals for fourth quarter.			
		126,500	2564
Total for first quarter.		110,532	2028
Total for second quarter.		141,388	3656
Total for third quarter.		52,020	902
Total for year 1905.		430,540	8850
*Established mills enlarging.			

American Cotton Manufacturers.

In accordance with a resolution adopted at the recent meeting of the board of governors of the American Cotton Manufacturers' Association, the president, Mr. R. M. Miller, Jr., has appointed a standing committee on conference, the duty of the committee being to attend all conferences between this association and any other organizations, as follows:

Messrs. T. I. Hickman, president Graniteville Manufacturing Co., Augusta, Ga.; A. H. Lowe, treasurer Parkhill Manufacturing Co., Fitchburg, Mass.; S. B. Tanner, president Henrietta Mills, Henrietta, N. C.; C. H. Fish, agent Ocochee Manufacturing Co., Dover, N. H.; L. W. Parker, president Olympia Mills, Greenville, S. C. In addition, President Miller and Secretary C. B. Bryant are members of the committee. Some weeks ago a conference was held in Charlotte, N. C., between the board of governors of the American Cotton Manufacturers' Association and a committee from the Southern Cotton Association looking to the establishment of closer trade relations between the spinner and the producer, which will no doubt prove the initiative of a number of subsequent important meetings.

Gray's Big Mill Completed.

Probably the first big Southern cotton mill, which has been under construction for some months, to be completed in the new year is that of the Gray Manufacturing Co., at Gastonia, N. C. This enterprise has previously been referred to several times by the MANUFACTURERS' RECORD. It includes modern mill buildings in which is being installed 10,240 spindles

ment of 430,540 spindles and 8850 looms, representing an investment of about \$8,600,000. Of the total additions, 316,500 spindles are credited as additions to established plants. The second quarter of the year, including April, May and June, led in announcements, 141,388 spindles and 3656 looms, and the fourth quarter, including October, November and December, was second with 126,500 spindles and 2564 looms. Probably the most important announcement of the last quarter of the year was that of the plan of the Dan River Power & Manufacturing Co. of Danville, Va., to double the capacity of its denim mill, which now has 43,000 spindles and 1600 looms. The following table gives details by States for the last quarter of the year and by totals for the year:

for the new plant. Last April the MANUFACTURERS' RECORD referred to the company as contemplating this extension of its enterprise, and it was then stated that surveys were being made for the improvement work. There are 4368 spindles, etc., in the present mill.

The Warioto Cotton Mills.

The MANUFACTURERS' RECORD has previously referred to the organization of the Warioto Cotton Mills of Nashville, Tenn., and that company's plans for modernizing the cotton-manufacturing plant of the Tennessee Manufacturing Co., which was purchased. It can now be stated that the final decision for equipment is the installation of 20,000 spindles and 500 looms for the production of cloth. Most of the machinery has been purchased, and is expected to be placed in position during 1906. W. R. Odell of Concord, N. C., is president; William Nelson, vice-president, and Jo B. Morgan, secretary-treasurer, of the Warioto Cotton Mills, and the capital stock is \$200,000.

To Operate Southern Mills.

The Bellevue Cotton Mills Co. has purchased from the International Trust Co. of Baltimore, Md., the Windsor Mills, Windsor, N. C.; the Chicora Mills, Rock Hill, S. C., and the Moorhead Mills, Moorhead, Miss. These mills were formerly the property of the Southern Textile Co., and it is the intention of the new owner to operate the plants. The Bellevue Company has its offices at 114 Chestnut street, Philadelphia, Pa., W. H. Harriss being president and T. A. Blythe secretary-treasurer.

Textile Notes.

It is proposed by W. B. Moore of Yorkville, S. C., to organize a \$100,000 stock company to build a cotton mill which will be operated by electricity obtained from the water-power-electrical plant of the Catawba Power Co.

Messrs. O. N. Starr and J. M. Lang of Calhoun, Ga., propose organizing a company with capital stock of \$100,000 for the purpose of erecting a cotton mill. They have subscriptions to more than \$50,000 and intend to effect permanent organization when \$100,000 has been secured. After that, consideration will be given to such details as number of spindles and looms, size of buildings, etc.

The Athens (Ala.) Cotton Mill Co. is proceeding steadily with the installation of the 2500 additional spindles recently contracted for. A 100-horse-power boiler, carding machinery, spoolers and reels are also included in the new equipment, and the new building required is 60x90 feet in size. About \$20,000 is being expended for the betterments, which will about double the plant. The spinning machinery is being furnished by the Fales & Jenks Machine Co. of Pawtucket, R. I.

A dispatch from Jackson, Miss., says that owing to the impossibility of obtaining seed supplies, many of the small cotton-oil mills in Mississippi are now closing down, and within the next 10 days not more than one-half of the mills in the State will be in active operation. Mill managers declare that the season has been the shortest in the history of the cotton-oil industry, and that by the first of March less than a half-dozen plants in the entire State will be in operation.

A public exhibition will be made near Paris, Texas, of one large and one small-sized cotton-picking machine known as the Dixie, and the trial of these machines, which is announced for this week, is for the purpose of demonstrating to the planters the practicability of this cotton-picker.

for the production of yarns in single and ply skeins, warps, cones and tubes. These yarns will be Nos. 40 to 80, and probably finer than that. The power plant consists of a Westinghouse-Parsons 450-horse-power steam turbine connected to a Westinghouse 400-kilowatt generator, three 150-horse-power Babcock & Wilcox boilers furnishing the steam. Electricity will be used for both lighting and power. An automatic suction cotton feeder connects directly to the picker-room and with the picking machinery. A modern sewerage and water-works system has also been constructed. There will be about 100 operators employed and from 10,000 to 12,000 pounds of yarns will be manufactured every week. Stuart W. Cramer of Charlotte, N. C., has been the mill architect in charge. It is expected that the entire plant will be in operation in a few weeks. The Gray Manufacturing Co., it is understood, has invested about \$175,000 in this mill and its accompanying improvements. George A. Gray, an experienced manufacturer who has been connected with a number of mills, is president and treasurer.

Spencer Mountain Mills.

The Spencer Mountain Mills of Lowell, N. C., has amended its charter and obtained authority to issue preferred stock. It is understood that this action is the first move in the development of additional water-power to be transmitted by electricity for operating another cotton factory which the company intends to build. At present the company has a wing dam which is to be extended and reconstructed, probably 1000 horse-power to be developed

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

COAL & COKE RAILWAY.

Henry G. Davis' New Line to Begin Regular Operations.

The Coal & Coke Railway has been completed, and it is expected that shortly regular passenger service will be established between Elkins and Charleston, W. Va. The road has been in operation for freight service for a week or two, since the closing of the link between Sago and Gassaway, that work having been completed at Walkersville, in Lewis county. The distance from Elkins to Charleston is 180 miles, and it is proposed in the future to operate trains through between Charleston and Baltimore in connection with the West Virginia Central and the Western Maryland railroads when the latter's Cumberland extension is completed, thus giving a short route between the two cities.

The present line of the Coal & Coke Railway is from Elkins over the tracks of the West Virginia Central for eight miles to Mabie, and thence over the Roaring Creek & Bollington Railroad, which is practically part of the Coal & Coke Railway, having been owned by the Davis Colliery Co., to Leiter, where the new construction begins and continues to Otter, W. Va., about 100 miles, whence the Charleston, Clendennin & Sutton is followed to Charleston.

Messrs. Henry G. Davis, Stephen B. Elkins and R. C. Kerens projected this road more than two years ago to open up a rich mineral territory in West Virginia. They bought the Charleston, Clendennin & Sutton Railroad, which was merged into the Coal & Coke. The purchased line had 63 miles of track in operation from Charleston to a point up the Elk river at Otter. In 1904 the Coal & Coke built an extension from Otter to Gassaway, 28 miles, and at the other end of the line 14 miles was built to Sago, on the Buckhannon river. Since then the gap between Sago and Gassaway has been closed mile by mile until it is now finished.

A great deal of heavy work was necessary to complete the connection between the Charleston, Clendennin & Sutton Railroad and the Elkins end of the line. Twelve tunnels were required on the 100 miles of new road, and 30 steel bridges were built; many large cuts and fills were also made. Besides this wholly new construction, it was necessary to rebuild the Charleston, Clendennin & Sutton Railroad, putting in heavier rails and new ties and also filling in some trestles. To accomplish all this large forces were kept employed constantly, work in some cases going on night and day, and, of course, the reconstruction of the existing road was made the more difficult because it had to be done without interrupting traffic. Now there is a first-class railroad heavily tracked and ballasted and capable of carrying an immense volume of business.

The purpose of this new road is to develop large bodies of coal land owned by Messrs. Davis, Elkins and Kerens in Randolph, Upshur, Lewis, Braxton and Gilmer counties, where they are said to hold tracts aggregating 200,000 acres. No doubt the development of this region will require the construction of several branches from the main line of the railway, thus forming what will in time perhaps become valuable feeders not only of mineral and timber traffic, but of other classes of freight and also passenger business.

The Coal & Coke Railway already has a liberal amount of equipment, there being 16 locomotives and about 1400 cars, and the completion of the line will no doubt

necessitate large additions to the rolling stock during 1906. The general manager is Mr. W. H. Bower, who has had general supervision of the new construction during the past two years.

Senator Davis, who projected the Coal & Coke Railway, is, notwithstanding his advanced years, one of the most active men in the busy State of West Virginia, and it is not probable that the completion of the Coal & Coke Railway will be the last of his transportation ventures. He has had engineering corps for the last year or two making surveys in Randolph and Pendleton counties, West Virginia, looking to the construction of a new through route into and across the State of Virginia to a point on tidewater for the purpose of affording an independent outlet for West Virginia coal. While there has been no decision so far as announced to build this projected line to the Chesapeake bay, it is not at all improbable that its construction will be undertaken within the next two or three years, and it has been suggested that the Chesapeake Western, a small line of 41 miles running east and west in Rockingham county, Virginia, and the Potomac, Fredericksburg & Piedmont Railroad, another line of very nearly equal length in Spotsylvania and Orange counties, might be absorbed and used as parts of such a road, as they lie right in its path and run in the same general direction which it would follow.

Florida, Cuba and Nassau.

The Southern Railway Co.'s passenger department has issued two beautiful winter books—one entitled the "Right Road to Florida" and the other the "Right Road to Cuba and Nassau." Each was written by Mr. William E. Curtis, the widely-known newspaper correspondent, and the illustrations are from original photographs and artists' drawings especially prepared for these publications.

The cover of the Florida book is a delicate bit of color-printing, and presents an enticing picture representing a scene at one of the great resorts of the American Riviera. Within the reading matter surrounds pretty half-tones environed by a border in a tasteful shade of green. The letter-press, written in an interesting style, gives complete information concerning the railroad facilities and the points reached by them. This includes not only Florida resorts, but points in the Carolinas and Georgia. A convenient map of a practical size is included.

The Cuba and Nassau book, while more in the nature of a folder, is printed upon heavy paper, and is also liberally illustrated with half-tones from photographs. The reading matter is graphic and entertaining. On the cover are appropriate illustrations in colors.

Mr. W. H. Tayloe is general passenger agent of the company at Washington, D. C., and many thousands of these books will be distributed through the various offices of the company to acquaint the public with the Southern's Palm Limited and its generally fine equipment for reaching resorts in the South, the Bahamas and the Island of Cuba.

Dalton & Allendale.

Mr. J. M. Sanders writes from Dalton, Ga., to the MANUFACTURERS' RECORD as follows:

"There has been an application made for charter of the Dalton & Allendale Railway to run from Dalton to a point at the foot of Fort mountain. This application has not as yet run the required time in the county papers, but will be ready for action in the latter part of January, when we expect to organize and begin survey and securing right of way for said road.

"No officers have been elected as yet.

It is generally understood that H. C. Hamblton, civil engineer, of Dalton, Ga., will be the engineer in charge.

"The territory through which this road is proposed to traverse will be from Dalton directly east to Spring Place; thence to Chatsworth, on the new line of the Louisville & Nashville Railway that is about completed from Knoxville, Tenn., to Atlanta, Ga.; thence east of Chatsworth to a point at foot of Fort mountain. Entire length will be about 22 miles. The region through which the road passes is very fertile in the valleys, and the Fort mountain district is rich in minerals which are to be developed."

COAST LINE TO ATLANTA.

May Build Its Own Road to Connect With Louisville & Nashville.

According to a report from Atlanta, Ga., the Atlantic Coast Line will either build its own road between Atlanta and Macon, Ga., 88 miles, or else make a traffic arrangement with one of the existing roads in order to secure a connection between the Louisville & Nashville in Atlanta and the Coast Line at Macon, which is reached over the Macon, Dublin & Savannah Railroad. It is also possible that the company will build a cut-off from Vidalia to a point between Jesup and Savannah, about 60 miles, in order to make a more direct route. If it is impossible to make a traffic arrangement with the Southern Railway or the Central of Georgia the Coast Line will, it is said, undoubtedly build its own line. According to the talk about the situation, the present purpose of the Coast Line is only to provide a through connection with the Louisville & Nashville via Macon and Atlanta, and not to become a competitor for local business in Georgia, although if it built its own road its attitude would be changed.

Rogersville to Moccasin Gap.

The Holston River Railway has been chartered in Tennessee to build a line from Rogersville to Moccasin Gap, near Gate City, Va., about 20 or 25 miles, and not far from Bristol. It will follow the valley of the Holston river and will connect with both the Southern Railway and the Virginia & Southwestern Railway. Construction is to begin in the spring, and the road will open a rich farming and mineral country. A report that the Virginia & Southwestern Railway, Henry K. McHarg's line, was interested was denied by J. H. Frantz, one of the incorporators. The others interested are J. H. Frantz, J. B. Wright, Howard Cornick, Charles O. Lutz and John M. Thornburg, all of Knoxville, Tenn.

It is said that three of the incorporators are connected with the Louisville & Nashville Railroad's legal department at Knoxville.

The route to be followed by the line was selected a long time ago by the Knoxville & Bristol Railroad Co., and while a survey was made, the line was never built.

May Make a Southport Terminal.

The announcement that the Seaboard Air Line will lay 90-pound rails on its line running southeast from Hamlet, N. C., to Wilmington, N. C., is accepted as indicating a purpose of the company to operate in connection with the South & Western Railway that is now being extended to Rutherfordton, N. C., and Spartanburg, S. C., both of which are on the Seaboard system. It has been anticipated for a long time that the construction of the South & Western's extension would result in the making of another great coal terminal either at Wilmington, N. C., or at Southport, but this declaration that a section of the Seaboard which has hitherto been of minor importance would be

brought up to a high state of track efficiency is the first sign to indicate that some such terminal plans are under serious consideration. Reports from Wilmington say that the Seaboard is making surveys for an extension, possibly to Southport, which is about 30 miles south of that city.

Deepwater to Charleston.

An interesting report is circulated in West Virginia to the effect that the Deepwater and Tidewater railways, which are being built to make a continuous line from the Kanawha river to Norfolk, Va., will be extended westward from Deepwater, W. Va., along the Kanawha to Charleston, W. Va., connecting there with the recently completed Coal & Coke Railway owned by Henry G. Davis, Stephen B. Elkins and others. This would give the Deepwater and Tidewater line a connection to Cumberland and Baltimore, Md., as well as to various points in West Virginia, and when the Western Maryland's extension from Cumberland to Pittsburg is built as projected that important city would also be reached. The distance from Deepwater to Charleston is about 35 miles, so that the amount of new track necessary to make the connection would not be very great.

Christmas on the Havana Limited.

The Christmas Day menu card of the Mobile & Ohio Railroad's Havana Limited is a pretty specimen of art printing and the menu itself is a notable and comprehensive example of the art of an accomplished chef, including, as it does, a wide variety of delicacies all the way down the line from oysters to dessert. The piece de resistance was, of course, roast turkey, in honor of the day, with what is not any too common in this country, old-fashioned English plum pudding to conclude the meal. The Mobile & Ohio, as usual, did a large holiday business, giving special rates for the Christmas season to its patrons all along its lines. John M. Beall is general passenger agent of the company at St. Louis.

Traction Companies to Consolidate.

A press report from Wheeling, W. Va., says that the Wheeling Traction Co. has purchased control of the Panhandle Traction Co. It is said that the stock purchased was that owned by Howard Hazlett and Edward Hazlett, with possibly a few others, and that the deal resulted because other interests sought to obtain control of at least one of the electric companies. The Wheeling and Panhandle traction companies will, it is stated, now be consolidated. The Panhandle has 17 miles and the Wheeling about 50 miles of line.

Big Car Contracts Let.

According to press reports the Southern Railway has awarded car-building contracts for 7500 box cars of 60,000 pounds capacity and 2500 steel gondola cars of 100,000 pounds capacity as follows: 1250 box cars from the Western Steel Car & Foundry Co., 1750 box cars from the American Car & Foundry Co., 3000 box cars from the Mt. Vernon Car Manufacturing Co., 1500 box cars from the Lenoir Car Works, 600 steel gondola cars from the Standard Steel Car Co. and 1000 steel hopper gondola cars from the American Car & Foundry Co.

A Southern Railway Link.

The charter of the Asheville Southern Railway, according to a report from Asheville, N. C., is for building a five-mile link of the Southern Railway near that city. The line will connect with the Western North Carolina Railroad division and run

along the valley of the French Broad river and Beaver Dam creek to another point on the road, and will, it is said, take up industrial developments. Mr. A. B. Andrews, vice-president of the Southern Railway at Raleigh, N. C., heads the list of incorporators.

Edenborn's Line Progressing.

The Louisiana Railway & Navigation Co. proposes, according to a dispatch from Baton Rouge, La., to operate passenger trains between that city and Angola and Gonzales by March 1. Gonzales is about 25 miles southeast of Baton Rouge in the direction of New Orleans, while Angola is to the northwest. Track is already laid from Shreveport as far as Baton Rouge, and the New Orleans extension is to be completed perhaps in April or May, but at any rate, according to expectations, by June.

Fayetteville to Beckley.

The Fayetteville & Beckley Railway Co. has been chartered in West Virginia to build a line from Fayetteville to Beckley, about 30 miles, via Oak Hill, Glen Jean, Mount Hope and Prosperity. Branches will be built to mines. The gentlemen interested are also concerned in the building of the 2½-mile electric railroad from Fayette Station to Fayetteville. The list of incorporators includes A. D. Roberts, Ben D. Koontz, J. R. Kyle, Edmund R. French and W. B. Jones, all of Fayetteville, W. Va.

Augusta & Elberton.

The Augusta & Elberton Railroad has, it is reported, sold sufficient bonds to build 15 miles of its line out of Augusta, Ga., towards Elberton, Ga., and construction is to begin immediately. The officers of the company are: President, E. F. Verdery; treasurer, W. K. Kitchen; secretary, F. T. Lockhart; directors, James U. Jackson, Gwin Nixon, D. F. Jack and J. P. Armstrong.

Northern Central Statement.

The Northern Central Railway Co. reports increases for November, 1905, as follows: Gross earnings, \$70,800; expenses, \$53,300; net earnings, \$17,500. For the 11 months ended November 30, 1905, the report shows: Gross earnings, \$621,900; expenses, \$449,400; net earnings, \$172,500.

An Official Denial.

President J. F. Hanson of the Central of Georgia Railway writes from Macon, Ga., to the MANUFACTURERS' RECORD saying that the company has not bought the Stillmore Air Line, running from Collins to Wadley, Ga., 54 miles. This denies a recent press report.

Railroad Notes.

The Houston & Texas Central Railroad has completed a 10-stall roundhouse at Austin, Texas, the building being of brick and steel.

The Southern Railway Co. announces the following appointments: Mr. C. M. Tyler, traveling freight agent, Tampa, Fla., vice Mr. R. K. Barton, resigned; Mr. Geo. L. Castor, soliciting agent, Tampa, Fla.

Mr. B. F. Yoakum, chairman of the Frisco system, is reported as saying that he will establish offices in both St. Louis and Chicago, and he also denies the report that the company intends to extend from Birmingham to the Gulf.

J. B. Paul has been appointed general superintendent of the Texas & Pacific Railway lines in Louisiana and as far as Marshall, Texas. For the past eight years he has been superintendent of the New Orleans division of the same railway.

The Atlantic Coast Line has completed

plans for its car and locomotive shops to be built at Waycross, Ga., at a cost of about \$700,000. Bids for construction will be received until January 29, and it is expected that the contract will be awarded soon afterwards.

It is reported from Knoxville, Tenn., that the new line of the Louisville & Nashville between that city and Cartersville, Ga., will be connected up by January 15 and freight trains will be operated immediately, although passenger service will not probably begin until February 1.

The Norfolk & Western Railway, according to a report from Philadelphia, where the control of the company is centered, will spend about \$1,000,000 for improvements in Roanoke, Va., this year. It is said that about \$800,000 will be spent for a new freight yard; also that the shops will be enlarged and the double-tracking work along the main line will be continued.

FOREIGN LETTERS

THE MANUFACTURERS' RECORD is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. Some of these letters indicate the disposition of foreigners to buy American goods, and are therefore of interest to our readers.

The Boycott in Bengal.

Valabhdas Lakhmid & Co., Tamarind lane and Churchgate street, Bombay, Ind.: "There is in several parts of India, in Bengal especially, the boycott movement against British manufactures pursuant to the partition of Bengal. The present is the very best time for non-British manufacturers to introduce their products, and if any of your advertisers seek an outlet for their manufactures we shall be pleased to co-operate with them."

May Develop Quarries.

Mr. J. Bustamante, City of Mexico, Mexico:

"I devote myself to agriculture, actively looking after my two plantations, which are so close to the capital and can be reached so easily that I give their cultivation my careful personal attention at all times. Recently various persons have approached me with plans for the formation of a company to exploit some quarries which are on one of my properties."

The Joplin District.

The combined value of the zinc and lead shipments from the Joplin, Mo., district in 1905 was \$13,302,800, an increase of \$1,815,455 over last year. This increase is due rather to the increase in value of the ore, as the number of tons shipped, 252,435 tons of zinc and 31,678 tons of lead, is a decrease of 14,804 tons of zinc and 2689 tons of lead under the amount shipped in 1904. The highest price received for lead ore during the year was \$80 per ton, the lowest being \$57. An average of \$62.12 per ton was received for the year, as compared with an average of \$54.30 last year. The average price paid for zinc ore during the year is estimated at \$44.80, as compared with an average price last year of \$35.92.

The annual report of the mine inspector for Indian Territory shows the total production of coal for the past year to be 2,970,961 tons. As compared with the output of the previous year this is a decrease of 349,096 tons, which is attributed to a falling off of demand.

The Cranberry Fuel Co. has made the first shipment of coal over the Piney & Paint Creek Railroad from its Skelton mine, near Beckley, W. Va. It is stated that other mines of the company will be ready for shipping coal within a short time.

LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

High Prices for Lumber.

Ancient the prevailing high prices of lumber of all kinds and the bright prospects for manufacturers and dealers, Mr. W. F. Hand of the Hand Lumber Co. of Dolive, Ala. (postoffice at Bay Minette), is reported from Birmingham as saying:

"There is a remarkable demand for lumber. Our company is exporting a considerable amount, while the domestic demand is very strong. There is an active market for all kinds of lumber, flooring in particular being needed. We have advices that there will be a large amount of building done during the coming year, and so far there is no indication of a falling off in demand or quotations. A few years ago lumber sold under \$6 that is now bringing over \$12.50 and \$15. Heavy timber is in strong demand, and the exportation is on a large scale. In the immediate Birmingham section there is a strong demand, and the mills in this part of the State are working hard and are handling much lumber. The railroads are a little slow in handling the business, but as a whole they are doing fairly well."

Facilitate Timber Development.

Reports state that the Laurel River Railway Co., which is constructing a railroad from Laureldale, Va., to Mountain City, Tenn., will complete it about January 15, 1906. It is stated that the railroad will be owned and operated by T. W. Thayer & Co. of Damascus, Va., who are operating the plant of the Helena Lumber Co. This line will facilitate the development of 15,000 acres of timber in Johnson county, Tennessee, owned by T. W. Thayer & Co., by connecting it with the plant at Damascus. Another road of importance to be constructed is that which it is said the Whiting Lumber Co. will build from a point between Laurel Bloomery and Mountain City, on the Laurel River Railway, to penetrate a tract of 15,000 acres of timber land in Carter county, Tennessee. This property is owned by the Whiting Lumber Co., and will also be connected with the company's plant at Abingdon, Va., which has recently been erected.

A Handle Plant.

The Acme Handle Co. of St. Louis, Mo., has recently been incorporated with a capital stock of \$15,000 and purchased the plant of the Acme Handle Co. at Biene, Ark. New machinery of modern design has been installed which will largely increase the capacity of the plant, at present manufacturing axe, sledge, pick, hammer and hatchet handles in standard and other grades. The location of the plant is on the main line of the Iron Mountain Railroad in what is considered one of the best hickory timber districts. Officers and directors of the company are W. D. Biggers, president; James Milne, vice-president; John E. Pilcher, treasurer; J. E. Duffield, secretary and manager; James Wilson, W. W. Milne, J. N. Sutherland and L. G. Blackmer.

To Erect Veneer Mills.

Reports from Louisville, Ky., announce that plans have practically been completed for the incorporation of a company by local capitalists for the erection of a veneer mill to cost about \$75,000. Site for the proposed plant has been purchased by St. Marc O. Mundy, representing the parties interested, and covers practically one block. It is located west of the tracks of the Kentucky & Indiana Bridge & Rail-

road Co., and will be made accessible by the construction of a switch. The identity of those who are promoting the enterprise has not been made public, nor the amount of capital stock which the company will employ, the report being made, however, that this will be about \$75,000.

Naval Stores Company.

Dr. B. F. Camp, S. G. Culpepper, J. B. Mills and H. A. Cannon have incorporated the Carrabelle Naval Stores Co. for the purpose of developing naval stores properties in Wakulla and Franklin counties, Florida. The company will begin operations at once, maintaining its principal office at White Springs, Fla., and making Carrabelle its shipping point. Dr. B. F. Camp is the president and J. B. Mills general manager of the company.

Big Mississippi Purchase.

Dispatches from Hattiesburg, Miss., announce the purchase by Senator Hatton of Wisconsin of the holdings of the Gulf Coast Lumber Co. of Lyman, Miss. The property consists of a saw-mill and equipment valued at \$150,000 and about 300,000,000 feet of standing timber of good quality located on the line of the Gulf & Ship Island Railroad. It is understood that the deal involved an expenditure of about \$600,000.

Lumber Notes.

The barge L. A. Dempsey is loading 30,000 railroad ties at Alexandria, Va., for shipment to New York. The schooner William P. Hood has arrived at Alexandria and will load railroad ties for Boston.

According to estimates, buildings erected in Norfolk, Va., during 1905 represent a valuation of \$2,203,754, which is about twice the valuation of buildings erected in that city during any one previous year.

Mr. T. H. Bradley of Lexington, Ky., has purchased 403 walnut trees from the farm of Harper Bros. near Midway, Ky. It is stated that about 200,000 feet of lumber can be cut from them, most of which will be exported to Germany.

Plants Completed.

The new plant of the Albany Phosphate Co. of Albany, Ga., which has been under construction for some time past, has been completed and will be put in full operation as soon as the necessary labor can be secured. Costing \$250,000 to erect, the plant is equipped with machinery of modern design and will have a capacity of 35,000 tons of acid phosphate per year. Its machinery will be driven by electric power from the Big Shoals plant a half-mile distant. The location of the plant is between the main lines of the Seaboard Air Line Railway and the Central of Georgia Railway. Several hundred men will be employed.

A 100-ton fertilizer factory under construction at Henderson, N. C., to be operated in connection with the Henderson Cotton Oil Mills, is practically completed, and operations will begin about January 15, 1906. Buildings have been erected and equipped with machinery of modern design for the production of fertilizers of standard grades.

Mt. Pleasant Phosphate.

Reviewing the phosphate industry of Mt. Pleasant, Tenn., for 1905, a dispatch from that city states that at present there are 100,000 tons of rock already mined, costing about \$225,000 to produce and valued at \$600,000. During the year there have been mined 500,000 tons of phosphate rock which cost to produce \$1,250,000. Two fertilizer factories have been erected in Mt. Pleasant during the year.

MECHANICAL

Safety Fire-Bucket Tank.

The problem of keeping fire pails filled and in order, one which continually confronts merchants, factory and mill owners, has been solved. The solution is said to be in the use of the Safety Fire-Bucket Tank, to replace foul-smelling and unreliable casks and pails.

The Safety Fire-Bucket Tank has been on the market 11 years, and in this time has been sold all over the United States. Its simplicity makes its installation desirable in all kinds of buildings; it cannot get out of order, and can be used by anyone without instruction. The tanks and buckets are made of heavy galvanized iron. The top and bottom are stamped out of



SAFETY FIRE-BUCKET TANK.

one piece, with malleable hinges and hasps. The buckets and the inside of the tanks are coated with a heavy asphaltum preparation to prevent corrosion. The outside of the tank is japanned in red.

These tanks are made in two sizes, holding, respectively, 25 and 40 gallons of chemical solution and six buckets each. The buckets are made with lugs on the side to prevent binding, and have automatic handles. The top bucket is always full, with the handle up. When this is removed the next bucket fills immediately and the handle rises, and so on until the six buckets are removed, and then there is enough solution left to refill four buckets.

A rubber packing prevents evaporation



SAFETY FIRE-BUCKET TANK—PERSPECTIVE VIEW.

and the chemical keeps the water sweet. Where tanks are exposed to freezing weather a compound is put in which prevents freezing in a temperature of 20 degrees below zero.

These tanks are endorsed by fire underwriters, and the manufacturers have a system whereby each purchaser receives a notice every six months asking him to make an inspection of the tanks and report if not in perfect order. Tanks purchased 11 years ago were recently inspected and found to be in as perfect condition as when installed.

An accompanying illustration shows the Safety Fire-Bucket Tank.

For further information address the manufacturer, the Safety Fire Extinguisher Co., 29-33 West 42d street, New York.

guisher Co., 29-33 West 42d street, New York.

Pumping Machinery for Acid Mine-Water.

The severe conditions of modern deep mining often necessitate the use of special mining machinery to ensure the success of the undertaking. The selection of a large

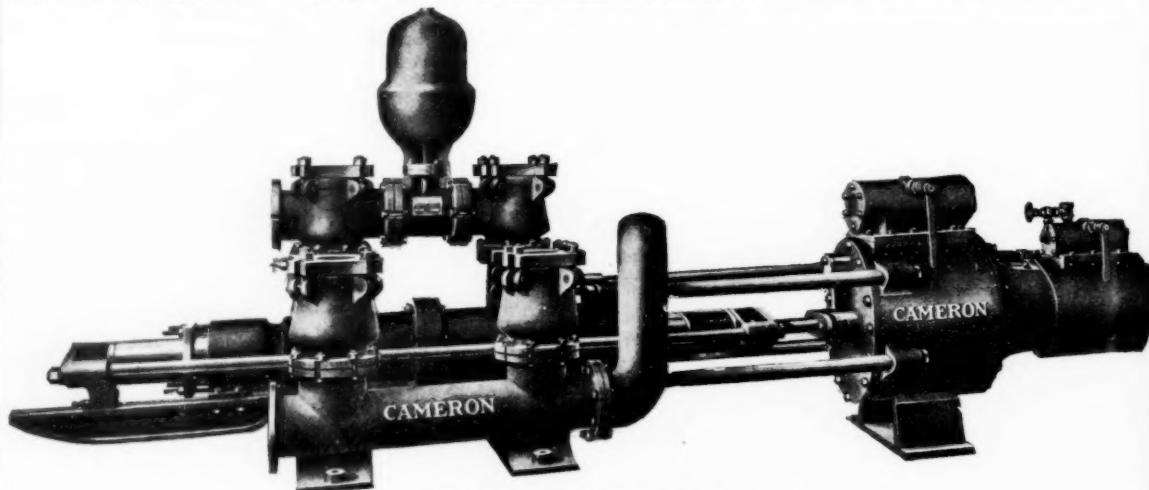


FIG. 1.—PUMP FOR ACID MINE-WATER.

pumping plant is always a matter of vital importance, and requires a thorough knowledge of the situation and appreciation of the surrounding conditions.

In the anthracite and bituminous coal fields and in the Montana copper territory the water to be pumped from mines is usually highly impregnated with sulphuric and other acids, which are destructive to unprotected parts of machinery. The water ends of the pumps must, therefore, be designed to withstand not only the heavy pressures, as the lifts are often very high, but also the corrosive action of the water, to insure a satisfactory duration of service.

Hence there are no factors so valuable to the pump designer as a thorough knowledge of the requirements and a successful experience in meeting them. When pumps are to be installed they should be so sectionalized and with parts relatively light that any or all can be removed or replaced at minimum cost and time. They should also be simple in design, having few working parts and none exposed to external damage, yet accessible and easy to operate, so that comparatively inexperienced men can run them should necessity arise; further, these pumps should be compact on account of the comparatively small area of mine shafts. It is also essential that the pump be of perfect construction and reliable in service, from the fact that

peculiar to the Cameron. The steam mechanism is claimed to consist of fewer working parts than any other steam pumps made, and is without any outside valve gear. It is absolutely positive in action, requiring no more skill to run them than a simple pump, from the fact that it is without intervention of arms or levers.

Fig. 2 defines very clearly the construction of these cylinders, both being well proportioned of hard, close-grained iron, and of ample thickness to allow reborring if necessary. The steam ports are of such size and arrangement as to allow the pumps to be operated at very high speed with the least friction and back pressure; in fact, it is stated that the Cameron pump can be run without danger of breaking at a very high speed, and much faster than a duplex pump. The connections between the steam and the water ends are made by means of steel tie-rods, two on each side. These are bolted to the lugs on the sides of the cylinders, and so arranged as to allow the low-pressure cylinder heads to be removed at any time. This gives complete accessibility to the low-pressure steam piston, as well as enabling the removal of the plunger when necessary without dismantling the pump.

The water end consists of two working barrels and four valve chambers, the latter being commonly called "pots." There are two water plungers connected to the

securely held in place, and which cannot become loose. The valve No. 4 is a rubber disc, and is protected by the heavy bronze guard No. 5, which also serves as a stem working in the guide No. 7. A section of the spring is also shown as No. 6. The use of a large single water valve in each

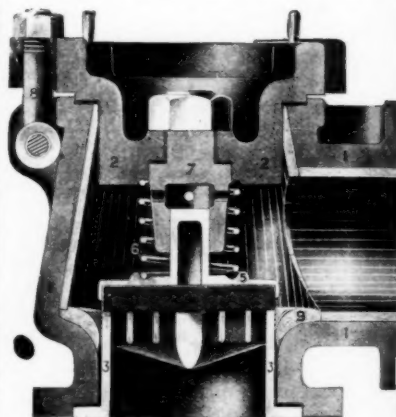


FIG. 3.—MINE-PUMP VALVES.

of these chambers instead of groups of smaller valves allows the passage of comparatively large solid bodies, such as pieces of coal and dirt which may enter into the water and would otherwise clog the valves. Each of the chambers are fitted with covers held in place by four

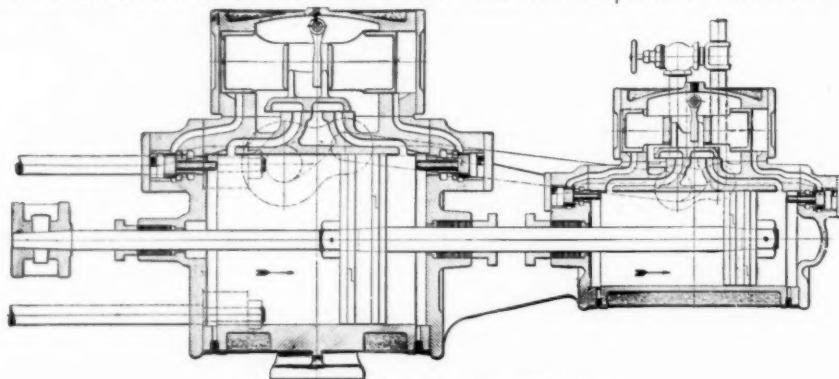


FIG. 2.—SECTIONAL VIEW OF MINE PUMP.

often in an emergency a pump may be submerged until it unwaters the mine or run continuously for months without stopping to prevent the mines from becoming flooded.

From the numerous types of mine station pumps herewith is illustrated and described one of the most recent designs

outside rods, and they are the only moving parts in the water end, except the valves, coming in contact with the water.

The plunger works through deep stuffing-boxes, which are lined with acid-resisting bronze bushing that can be easily removed and renewed when necessary.

The interior arrangement of the valves

swing bolts, making the water valves easily and readily accessible.

A distinctive feature of these water cylinders is that the metal throughout is of extra thickness, and in addition, when ordered and necessary to resist corrosion, wood-lined with sound white pine (see No. 9), which is securely wedged in place

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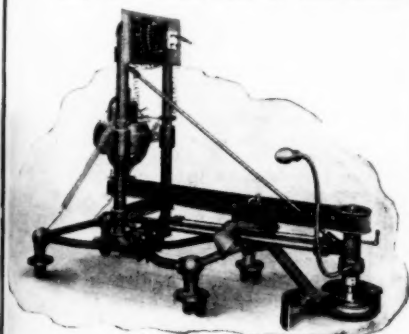
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to be water-tight. All the water passages can be provided with either wood, bronze or lead linings to meet the varied requirements, and these linings can be replaced when necessary at minimum cost. The velocity of the passage of water through the valves and chambers is reduced to as low a rate as possible by ample valve area and large water passages.

It is often essential to build this pump as a twin, consisting of two independent pumps connected together by means of Y pieces, ells, gate valves, etc., so that they may be run together or separately when desired, giving a range of capacity and power not obtainable with a duplex pump.

Floor-Dressing by Machine.

Because of its pleasing appearance and the sanitary advantages claimed for it, the hardwood floor has become very much in demand. The tedious work which has heretofore been necessary in the finishing of these floors has been a very considerable factor in the matter of determining the cost of laying a floor. The back-breaking task of scraping and rubbing the surface by hand is necessarily slow, and the services of many men were required when it was desired to perform the work rapidly. This has been changed recently by the introduction of a machine which is controlled by the Ransome Concrete Machinery Co., No. 11 Broadway, New York, by which the labor is reduced to a task of trifling proportions. This machine is said to be capable of doing not only more work, but of accomplishing



THE RANSOME FLOOR-SURFACER.

superior results, and in a fraction of the time formerly accorded the expert mechanic, who got down on his knees and laboriously tackled the floor and did the best he could, considering the primitive methods at his disposal.

The machine, which is illustrated herewith, is a one-man affair, runs on wheels and is as docile to guidance as a carpet sweeper. The surfacing, abrasive grinding or polishing disc is set with the precision of a cutter in a smoothing plane; the operator requires no other knowledge than to present all parts of the floor to the machine, thus producing a level surface absolutely unattainable under the old system of hand work. A suction pipe in close proximity to the revolving disc absorbs all litter, depositing the same in a housed receptacle on the machine. In other words, when the floor is finished and the machine pushed out of the door, it leaves a clean room and a glassy-smooth floor without any of the imperfections that invariably accompany hand work.

By substituting special surfacing and polishing discs, the machine is equally successful in renovating all kinds of floors, such as marble, concrete, tile, mosaic, terrazzo mosaic, etc.; and, again, a scrubbing brush is placed in the socket, which does more and cleaner scrubbing than can be done by hand.

The machine is light in construction, weighing only a trifle over 300 pounds, and by simply removing two bolts is divided into two nearly equal parts, and can, therefore, if necessary, be handled

by one man in moving upstairs or from one job to another.

To Economize in Oil and Waste.

An important item with power stations and manufacturers is the use of various oils and greases as lubricants, and cotton

lars, as they can be built with one machine and built cheaper, it is claimed, than under any other concrete system. Large contractors object to these machines because they think they cannot mix their concrete wet enough or put in yardage enough per day. But this has been suc-



PAULEY'S CONCRETE-WALL MACHINE.

or woolen waste or rags to handle the oil. It is customary to limit the use of waste as much as possible, and to save such quantities of oil as is practicable with the present known facilities. Many attempts have been made to clean waste and save oil, and this subject received the attention of Thomas S. Patterson, a well-known mechanical engineer, who invented a machine for the purpose. The machine requires no attention whatever except loading and unloading, and it takes from 20 to 30 minutes to separate each charge of oily waste.

The machine is a turbine engine, and contains a basket into which the soiled oily waste is placed. It is operated by steam which passes through the basket, separating the oil and grease from the waste. The oil and grease, being liquefied, leave the basket and flow down the machine through the oil vent. After that they can be filtered and used as brand-new oil and grease. The waste is removed from the basket, dried out and is as good as new waste. This process can be repeated over and over again. The machine has proved that waste worth two or three times its original cost has been thrown away because the oil, grease and waste that the machine reclaimed was worth that, and it is evident that users of waste are here offered an opportunity to make a great saving in their shop supply expense.

The maker of the machine guarantees it to be made of first-grade material and by competent workmen, and that it can extract 90 per cent. of the oil and grease contained in the soiled waste, and if, during the first year, any part breaks from defective material or workmanship, it will be duplicated gratis.

The Oil & Waste Saving Machine Co., Real Estate Trust Building, Philadelphia, Pa., is the maker, and is prepared to prove its claims for the equipment.

Pauley's Concrete-Wall Machine.

Two accompanying illustrations present views of Pauley's Concrete-Wall Machine and another shows a completed wall.

It is valuable for building residence cel-

lars, as they can be built with one machine and built cheaper, it is claimed, than under any other concrete system. Large contractors object to these machines because they think they cannot mix their concrete wet enough or put in yardage enough per day. But this has been suc-

would in one year save what they cost just for lumber that would be used in making braces.

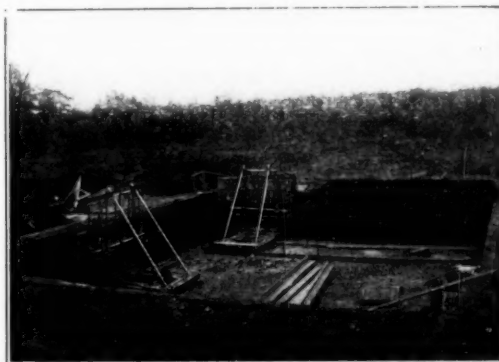
The maker of Pauley's machine says:

"We have demonstrated that we can build a solid double-faced wall from 8 to 24 inches thick and from one to five feet high without any lumber except what is used in construction of the machine; on a single-faced wall against a dirt bank, if it is solid enough so it will not cave, the same height, any thickness up to four feet. To go above five feet we will have to have trestle and plank to set machine on unless there is no obstruction on outside of cellar. Then we move machine on outside and will not require any trestle nor plank to go another five feet. We cannot use machine in water or any place where we do not have five feet of space clear from obstacles from the wall to be built."

Many orders for this machine are now being received by the Concrete Stone & Sand Co., the manufacturer, Youngstown, Ohio. More specific details will be furnished to inquirers by the company.

The Atlanta-Birmingham Life Insurance Co. of Atlanta, Ga., has been organized with \$1,000,000 capital. The incorporators are H. M. Atkinson, P. S. Arkwright, H. C. Bagley, C. E. Currier, J. T. Dargan, Dr. A. W. Calhoun, John W. Grant, J. Willie Pope, Willis Ragan and others of Atlanta; W. M. Drennen, W. G. Estes, Robert Jemison, G. B. McCormick, H. K. Milner, J. W. Minor, W. D. Nesbitt, Erskine Ramsay, R. N. Rhodes and David Roberts of Birmingham. J. Willie Pope of Atlanta will be president.

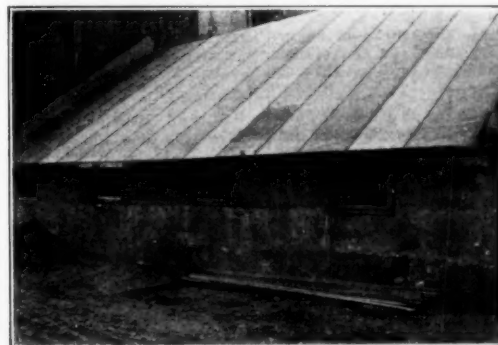
The Dickinson County Bank, with principal office at Clintwood, Va., has been incorporated with from \$25,000 to \$50,000 capital by H. C. Morison, president, Bristol, Va.; J. F. Trivitt, secretary and treasurer, Freeling, Va.



TWO PAULEY MACHINES CONSTRUCTING EIGHT-INCH RESIDENCE WALLS.

mantled and set up with two men in two or three minutes, and, therefore, should be very valuable for large contract work. Of course, a buyer would have to take possibly eight or ten of these machines,

D. S. Toney, editor of *Magnet*, Erwin, Tenn., writes: "I would like to be put in communication with firms in any line that could be handled by a raw hand who desire a man to answer calls from prospec-



CONCRETE WALL BY PAULEY'S MACHINE.

but in selling this number to one contractor the maker of the wall machine will set a low price, and the machines would probably last a lifetime. The maker of the machines believes they

tive purchasers in East Tennessee and adjoining sections in North Carolina, Virginia, Georgia and Kentucky, or to travel same territory as a collector with light samples of staple goods."

Construction Department

TO OUR READERS!

In order to understand and follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY.

The MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ADDRESS FULLY.

To insure prompt delivery of communications about items reported in these columns, the name of one or more incorporators of a newly incorporated enterprise should be shown on the letter addressed to that town, or to the town of the individual sought, as may be shown in the item, as sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. This will help to insure prompt delivery of your communication, although it is inevitable that some failures on the part of the postal authorities to deliver mail to new concerns will occur.

WRITE DIRECTLY.

It is suggested to advertisers and readers that in communicating with individuals and firms reported in these columns, a letter written specifically about the matter reported is likely to receive quicker and surer attention than a mere circular.

BALTIMORE BUILDING NOTES.

Business Buildings.

Baltimore—Market.—George A. Nagle, architect, 323 North Charles street, has prepared plans for a proposed market to be located on North avenue near Maryland avenue; two stories, 160x185 feet.

Baltimore—Office Building.—The Woodlawn Cemetery Co., 226 North Charles street, has commissioned Wyatt & Nolting, architects, Builders' Exchange Building, 2 East Lexington street, to prepare plans and specifications for office building and waiting room to be erected at the cemetery; two stories, 27x41 feet; brick with stone trimmings.

Baltimore—Apartment-house.—The bids submitted for the construction of apartment-house at northeast corner Monument and Howard streets were too high, and the plans will be revised and new bids taken by Wm. Hanson Hodges, architect, Wilson Building, 301 North Charles street.

Baltimore—Dwelling.—Michael T. Horner, 1018 Ashland avenue, has purchased lot at northwest corner St. Paul and 31st streets and will erect dwelling on the site, which is 50x106 feet.

Baltimore—Dwellings.—The Roland Park Company, Roland Park, has commissioned Wyatt & Nolting, architects, Builders' Exchange Building, 2 East Lexington street, to prepare plans and specifications for a number of frame dwellings to be erected at Roland Park.

Baltimore—Suburban Development.—Clarence M. Griffin, Galtier Estate Building, 111 North Charles street, has purchased 37 acres of land on Park Heights avenue, and will develop it for residential purposes.

Baltimore—Suburban Development.—Daniel W. Dwyer, 14 East Lexington street, as manager for a syndicate, will develop for residential purposes about 70 acres of land recently purchased on Falls road.

Baltimore—Store Building.—The Central Realty Co. (Sylvanus Stokes, Hotel Caswell) has awarded contract to Henry S. Rippel, 7 Clay street, for the construction of store

building and addition to the Hotel Caswell at 22 West Baltimore street; three stories, 23x152 feet; brick with limestone trimmings; steel-frame construction, fireproofed with concrete; slag roof; electric wiring and fixtures; sanitary plumbing; Joseph Evans Sperry, architect, Calvert Building, Fayette and St. Paul streets.

Baltimore—Apartment-house.—The Maryland Apartments Realty Co. (Wm. B. Ehlen, 814 Equitable Building, Calvert and Fayette streets) has purchased four-story dwelling at northeast corner Charles and Read streets, and will reconstruct the building and erect an addition in the rear, converting it into an apartment-house; Bayard Turnbull, architect, 12 East Lexington street.

Baltimore—Church.—St. John's Methodist Protestant Church, Clayborne Phillips, pastor, 308 Bank street extended, has purchased lot at Canton avenue and Canton street and will erect one-story and basement stone church on the site, which is 35x75 feet.

Baltimore—Dwelling.—Referring to dwelling for Joseph L. Wickes, commissioner of street-cleaning, City Hall, to be erected at Windsor Hills, the following contractors are estimating on the construction: Gustavus Stohr, 1354 Stricker street; Gladfelter & Chambers, 2672 Woodberry avenue; E. D. Preston, 140 West Fayette street, and Arthur F. West, 217 South Gilmor street; bids to be in January 6; Henry J. Tinley, architect, Hoffman Building, 11 East Lexington street.

Baltimore—Truckhouse.—The municipal Board of Awards has awarded contract to Frederick Decker & Son, 1209 East Biddle street, for the construction of truckhouse at Garrison avenue and Liberty road; two stories, 30x78 feet; brick with terra-cotta trimmings; steel beams; tin roof; electric wiring and fixtures; sanitary plumbing; heating system; cost about \$30,000.

Baltimore—Dwelling.—Wm. A. Krieger, 1101-1105 East Fayette street, has awarded contract to D. F. Schmid, 1000 Hopkins avenue east, for the construction of 2½-story stone dwelling on Erdman avenue, to cost about \$6000; Charles M. Anderson, architect, 324 North Charles street.

Baltimore—Church Buildings.—Frederick T. Dorton, Maryland Life Building, 8-10 South street, and Edwin W. Herrmann, 1425 West Lexington street, representing the Evangelical Lutheran Church of the Incarnation, have purchased a lot on Madison avenue near Bloom street for the erection of church, parsonage and parish-house; architect not as yet selected.

Baltimore—Dwellings.—John T. Murphy, 232 St. Paul street, representing clients, has purchased lot bounded by Hoffman and Luzerne streets, Lakewood avenue and Keyser street, and will erect about 45 two-story dwellings on the site.

Manufacturing Buildings and Other Enterprises.

Baltimore—Cloth-sponging and Waterproofing Plant.—Frank C. Wachter, 211 West German street, has commissioned Simonson & Pietsch, architects, American Building, Baltimore and South streets, to prepare plans and specifications for building to be erected at 209 West German street; three stories, 43x80 feet; brick with stone trimmings. This building will be used as an addition to Mr. Wachter's sponging plant, and a waterproofing department will also be installed.

Baltimore—Cement and Roof-tile Plant.—Alfred H. Taylor, architect, Hanover Building, 110 West Fayette street, is taking estimates on construction of one-story building, 43x120 feet, to be used as a cement and roof-tile plant.

Baltimore—Machine Shop.—The Detrick & Harvey Machine Co., Preston street near Greenmount avenue, has purchased lot adjoining its plant for the purpose of future enlargement.

Baltimore—Transfer Company.—Bridell Transfer Co. has been incorporated with an authorized capital stock of \$25,000 to conduct a general transfer business by Wm. S. Bridell, 36-38 South Charles street; Miles White, Jr., 15 North street; Frank A. Bonsal, James H. Cromwell and Redmond C. Stewart, 207 North Calvert street.

Baltimore—Storage Reservoir.—The State Legislature will be asked to authorize the city of Baltimore to float a loan of \$5,000,000 to establish a storage reservoir in the Gunpowder river. The reservoir will be seven miles long and three miles wide, and a dam 75 or 80 feet high will be constructed; E. Clay Timanus, mayor.

Baltimore—Real Estate.—The Realty Improvement Co. has been incorporated with an authorized capital stock of \$2000 to buy and sell real estate by H. Carroll Brown, 401 North Charles street; John Redwood, Stock Exchange Building; Percy H. Goodwin and Frank B. Smith, all of Baltimore, Md., and Charles Lee Andrews of New York. This company will erect an office building at northeast corner Baltimore and Calvert streets for the use of the Pennsylvania Railroad Co.

Baltimore—Chewing-gum Factory.—Trauty-Baqual Gum Co. has been incorporated with an authorized capital stock of \$4000 to manufacture chewing gum by Henry Trauty, 707 North Carey street; Emma G. Trauty, Sophia Baqual, 128 West Pratt street; John J. Horstman and Joseph Gassaway.

Baltimore—Enamel Works.—Michael T. Horner, Ashland avenue and Ensor street, has awarded contract to the Baltimore Sand & Contracting Co., Lobe Building, 15 South Gay street, for the construction of building for enamel works; one story, 40.9x59.9 feet; brick with galvanized-iron roof; cost about \$3000.

Baltimore—Paper-box, etc., Factory.—The C. J. Youse Company, 15 North Liberty street, has been incorporated with an authorized capital stock of \$60,000 to manufacture paper boxes and other paper novelties by C. J. Youse, J. Edward Youse, Louis A. Youse, Wm. E. Messersmith and Charles E. Hill.

Baltimore—Cloth-sponging and Waterproofing Plant.—Referring to addition to cloth-sponging and waterproofing plant to be erected by Frank C. Wachter, 211 West German street, at 209 West German street, the following contractors are estimating on the construction: C. A. Spicknall, 237 North Fremont avenue; Henry Smith & Sons Company, 116 South Regester street; George Bunnecke & Sons, 305 St. Paul street; Henry Pierson, 1009 Hanover street; Henry S. Rippel, 7 Clay street, and Wm. H. Wells, 211 North Liberty street; three stories, 43x80 feet; brick with stone trimmings; electric wiring and fixtures; sanitary plumbing; elevator; Simonson & Pietsch, architects, American Building, Baltimore and South streets; bids to be in January 6.

Baltimore—Typefounders and Electrotypers.—Shane-Beever Company has been incorporated with an authorized capital stock of \$8000 to conduct a business of typefounders and electrotypers; Warren H. Shane, president; W. L. Spencer, vice-president; George W. Beever, treasurer, and Henry W. Kroll, secretary; office and plant at Ashland avenue and McKim street.

Baltimore—Cigar Factory.—The Bransky Cigar Co. has been incorporated with an authorized capital stock of \$2000 to manufacture cigars by Joseph M. Bransky, 417 South Pulaski street; Jacob Bransky, 2049 Wilkens avenue; Simon B. Bransky, Fidelity Building; Abraham Oettinger and Henry M. Oettinger.

Baltimore—Ice Plant.—The Sunwalt Ice & Coal Co., 219 West Mulberry street, has been incorporated with an authorized capital stock of \$100,000 to manufacture ice and deal in coal by Charles P. Hammond, James C. Green, Charles M. Trueheart, Howard Hammond and Benjamin P. Clark.

Baltimore—Suburban Development.—The Strathmore Land & Improvement Co. has been incorporated with an authorized capital stock of \$16,000 to develop suburban lands for residential purposes by John T. Reed, Fidelity Building; Benjamin P. Simmons, Charles H. Gerwig, 2142 Walbrook avenue; Wm. B. Levy and C. E. Klein.

Baltimore—Pottery Supplies.—The American Pottery Supply Co., 616 North Calvert street, has been incorporated with an authorized capital stock of \$150,000 to produce and sell flint, limestone and other minerals by Henry M. Hanna, James C. Gittings, Stuart S. Jauney, Albert C. Ritchie, all of Baltimore, Md., and J. G. Gray of Wilmington, Del.

Baltimore—Lard Factory.—The High-Grade Lard Co. has been incorporated with an authorized capital stock of \$5000 to manufacture and deal in lard by Philip C. Fresh, 1306 West Franklin street; Wm. W. Dorman, Frank Ruckle, 2466 Frederick avenue extended; George B. Burrows and Neal Chappell.

Baltimore—Printing, Engraving, etc., Plant. Lucas Bros., Inc., 340 North Charles street, has been incorporated with an authorized capital stock of \$24,000 to conduct a printing, engraving and stationery business by Wm.

F. Lucas, Jr., Bertha E. Lucas, John C. Lucas, Theodore A. Steinhauser and John B. Ramsay.

Baltimore—Factory Building.—Daniel I. Broderick, Catonsville, Md., will erect factory building on King near Greene street; four stories, 66x90 feet; brick with stone trimmings; slag roof; fire doors; sanitary plumbing; electric wiring and fixtures; electric elevator. J. H. Miller, 110 Dover street; H. S. Rippel, 7 Clay street; Charles McCaul Company, 224 North Liberty street, and Frederick Decker & Son, 1209 East Biddle street, are estimating on the construction; J. Edward Laferty, architect, 11 East Pleasant street.

Subbids Wanted.

Mention of contractors wanting subbids on construction work and material will be found, when published, in the "Machinery Wanted" column on another page under the heading of "Building Equipment and Supplies."

ALABAMA.

Birmingham—Iron Furnaces and Mines. Steel Plant, etc.—In connection with the recent announcement that the Republic Iron & Steel Co. (general offices, Chicago) has secured control of the Tennessee Coal, Iron & Railroad Co., it may be stated (because of current reports) that no final plans have been completed for improvements to the various Tennessee properties. This is in accordance with the recent message to the Manufacturers' Record by wire from John W. Gates of New York, one of the new directors of the Tennessee Company. It is understood that betterments to the iron furnaces, steel plant, coal and iron mines, etc., will be planned and arranged for during the coming year. During 1905 the Tennessee Company expended probably over \$1,000,000 in development and improvement work, and about \$800,000 more will complete improvements now in progress. Authoritative details regarding future betterments will be made public later. Don H. Bacon remains president of the Tennessee Company; general offices, Birmingham; New York office, 100 Broadway.

Birmingham—Motor Factory.—The Van Dusen Motor Car Co. has been incorporated with \$25,000 capital stock to erect plant for the manufacture of automobiles, touring cars and motor trucks. C. B. Van Dusen is president and treasurer; A. O. Kehm, vice-president; R. D. Johnston, Jr., secretary, and E. W. Van Dusen, Jr., general manager.

Birmingham—Ice-plant Improvements.—Independent Ice Co., it is reported, will expend about \$75,000 in improvements to plant.

Birmingham—Electric-light Plant, Water-works and Steam-heating Plant.—Empire Construction Co. has incorporated to operate electric-light plant, water-works and steam-heating plant. Ross C. Smith is president; John L. Kaul, vice-president; F. B. Fowlkes, secretary, and Henry B. Gray, treasurer.

Cordova—Coal-mining.—Reports state that the Damascus Coal Co. is arranging for the development of coal properties near Damascus. It has a capital stock of \$100,000.

Gadsden—Iron Mines.—Incorporated: Rock Springs Stone & Ore Co., with \$15,000 capital stock, to develop iron properties. A. H. Quinn is president, and W. F. Johnston, Jr., secretary-treasurer.

Gadsden—Rolling Mill.—Weller Rolling Mill & Forge Co., reported last month as to rebuild at Gadsden plant formerly operated at Anniston, Ala., will shortly begin the work of construction. A 20-acre tract has been purchased on which to erect the necessary building, including a main building 80x200 feet of structural steel and stone, absolutely fireproof, in which the most modern rolling-mill machinery will be installed. Merchant iron and steel in the smallest of all shapes to eight-inch rolls will be made, and the plant, when fully equipped, will have a daily output of 70 to 80 tons. W. H. Weller will have charge of the construction.

Montgomery—Coal Mines.—Eastern Cahaba Coal Co. has increased capital stock from \$50,000 to \$75,000.

Troy—Gas Plant.—Troy Gas Co., previously reported organized to establish \$50,000 gas plant, has engaged F. D. Moses of Trenton, N. J., it is reported, as designing engineer.

ARKANSAS.

Batesville—Stone Quarry.—The Cave Creek Stone & Development Co. has incorporated with \$50,000 capital stock to quarry stone; incorporators, Robert H. Case, Wm. Reeves,

Martin R. Thayer, Ernest Neill and John E. McCormack.

Beirne—Handle Factory.—Acme Handle Co., reported incorporated last week under St. Louis, Mo., with \$15,000 capital stock, has purchased, will improve and operate the plant of the Acme Handle Co. A full line of axe, sledge, pick, hammer and hatchet handles in oak and hickory will be manufactured. Machinery will be installed and the output increased. W. D. Biggers, 705 Security Building, St. Louis, Mo., is president; James Milne of St. Louis, Mo., vice-president; J. E. Duffield of Beirne, Ark., secretary and manager, and John E. Pilcher of St. Louis, treasurer.

Burdette—Cooperage Plant.—Burdette Cooperage Co., reported incorporated last week with \$15,000 capital stock, has completed organization with W. W. Hollipeter, president; I. O. Westbrook, vice-president, and R. L. Morris, secretary-treasurer. Butter tubs and staves (white ash) will be manufactured. C. Cole of Burdette is engineer, and John Huber of Blytheville, Ark., architect. Machinery has been purchased; main office, Blytheville, Ark.

DeQueen—Water-works.—O'Neil Engineering Co., Dallas, Texas, has been awarded contract for the construction of proposed system of water-works, to cost \$13,000. Bids for the material will be received until February 15 by L. A. Pearce of DeQueen.*

Little Rock—Steel Viaduct.—It is reported that the Texas Bridge Co., Dallas, Texas, has contract at \$37,666 for the construction of proposed steel viaduct at Fort Smith crossing.

Oseola—Water-works.—Arrangements have been completed for water-works previously mentioned, and bids for the construction will be received by the Board of Improvement until January 10.*

Piggott—Coffin and Furniture Company.—S. F. Wheeler, J. F. Dayvault and others have organized the Clay County Coffin & Furniture Co.

Sedgwick—Lumber Mill.—The Culver Company, reported incorporated last week with \$25,000 capital stock, will manufacture and deal in hardwood lumber and cypress shingles. H. A. Culver is president and treasurer, and E. W. Culver, vice-president and secretary.

DISTRICT OF COLUMBIA.

Washington—Steel Plant.—Firth-Sterling Steel Co. of Pittsburg, Pa., reported last week as having purchased site near Washington on which to build steel plant, will manufacture armor-plate projectiles. It is proposed to erect two buildings, each 300x125 feet, one building 150x75 feet, and several smaller buildings, to have steel-structure frames and brick walls. J. R. Rose is engineer in charge. Proposals for the material are now being received.*

Washington—Furnace and Stove Works.—The Patent Hot Water Heating Co. has incorporated with an authorized capital stock of \$150,000 to manufacture and sell heating systems, furnaces, stoves, etc.; H. T. Offerding, president; D. H. Fenton, vice-president and treasurer, and H. Gardner, secretary.

FLORIDA.

Arcadia—Water-works.—Board of Public Works is having plans and specifications prepared for the construction of water-works, previously mentioned; the supply to be obtained from a six-inch artesian well. A 50,000-gallon-capacity water tank will be constructed; T. J. Youmans, chairman.*

Carrabelle—Naval Stores.—The Carrabelle Naval Stores Co. has been incorporated to manufacture naval stores. Dr. B. F. Camp is president, and J. B. Mills, general manager, both of White Springs, Fla.; main office, White Springs, Fla.

Gainesville—Sewerage System.—Board of Public Works has about completed arrangements for the construction of sewerage system, previously mentioned, and bids for the work will be received until January 25; Wm. W. Lyon, consulting engineer.*

Jacksonville—Laundry.—It is reported that John A. Young of Atlanta, Ga., will establish laundry.

Jacksonville—Bakery.—Max Isaacs has permit to erect one-story brick building, 24x18 feet, to be equipped as a bakery, having an oven-room 15x18 feet.

Lake City—Water-works and Electric-light Plant.—City will install water-works and electric-light plant for a population of 10,000 to 15,000. Plans and specifications will be furnished on application. J. C. Sheffield is chairman, and W. S. Fitch, secretary, Board of Public Works.

Miami—Cigar Factories.—It is announced that B. B. Tatum will establish one or two cigar factories.

Miami—Cigar Factory.—Ximanes Bros. have incorporated as the Miami Cigar Co. with a capital stock of \$50,000, and will erect cigar factory, also a number of employees' cottages.

Pensacola—Cement-block Factory.—Pensacola Cement Stone Co., recently organized, will establish plant for the manufacture of cement blocks. Machinery has been purchased; A. E. Hall, architect and engineer in charge.

Perry—Saw-mill.—Interstate Lumber Co. is the title of company reported last week as organized by J. W. Oglesby, Z. W. Oglesby, R. C. McIntosh, F. J. Spain and associates with \$200,000 capital stock for the development of about 30,000 acres of timber land near Perry. Arrangements will be made to erect saw-mill.

Tampa—Sewerage System.—Board of Public Works has let contract to W. V. Cole at \$11,000 for constructing brick storm sewers, and for other sewer work to the Coates Plumbing Co. at about \$10,000.

Tampa—Cigar Factory.—H. P. Gonzalez has organized stock company for the establishment of cigar factory.

Tampa—Cigar and Tobacco Factory.—De Soto Cigar Manufacturing Co. has been incorporated with \$200,000 capital stock to manufacture cigars, tobacco, etc. R. P. Evans is president; Manuel Mandez, vice-president, and Sterling R. Miller, secretary-treasurer.

West Palm Beach—Sewerage System.—About \$5000 will be expended in extending sewerage system, for which surveys were recently reported as being made; A. P. Anthony, chairman finance committee.

Wewahatchka—Timber Land.—It is reported that the Duluth Timber Co. of Duluth, Minn., and Eau Claire, Wis., has purchased 52,000 acres of timber land in Calhoun and Washington counties at \$400,000, which will probably be developed.

GEORGIA.

Calhoun—Cotton Mill.—O. N. Starr and J. M. Lang, referred to last week, will endeavor to organize a company with capital stock of \$100,000 to build the proposed cotton mill. When permanent organization has been effected consideration will be given to details of mill—number of spindles and looms, etc.

Canton—Iron-ore Mines.—Benton L. McMillin, J. H. Moore, E. S. Champion, J. O. Robertson and associates, all of Nashville, Tenn., have begun the development of iron-ore deposits near Canton.

Canton—Pyrites Mines.—A. Hirsch of Chicago, Ill., has purchased from George W. Wilkie at \$10,000 60 acres of land containing pyrites, in the eastern part of Cherokee county, and development work has begun.

Canton—Water-power-Electrical Plant.—A. J. Warner of Gainesville, Ga., is organizing company to build dam across the Etowah river near Canton for the development of water-power and the erection of electric plant for power transmission by electricity for lighting and power purposes.

Columbus—Bakery.—Roberts Baking Co. has been incorporated with \$10,000 capital stock by Columbus Roberts, G. C. Roberts, George S. Cobb and others to manufacture cakes, crackers, bread, etc.

Dalton—Saw-mill.—Independent Saw-Mill Co. has been incorporated with \$1000 capital stock by Louis Reemelin, Isaac Springer, Joseph Meiners, Charles Partin and W. H. Payne, Jr., to operate saw-mill.

Douglasville—Laundry.—J. T. Duncan and associates will establish laundry; population 1500.*

Edgewood—Electric-light Plant.—Town contemplates issuing \$15,000 of bonds for constructing electric-light plant. Address Town Clerk.

Jefferson—Canning Factory.—W. H. Smith and associates are organizing company to establish canning factory; capital stock \$10,000 to \$20,000.*

Kingston—Water-power-Electrical Plant.—Etowah Light & Power Co., previously reported incorporated under Atlanta, Ga., with \$50,000 capital stock by W. M. Kitchen and M. H. Garner of Fulton county and J. E. Thomas of New York, has secured water-power on the Hardin estate two miles distant, and will arrange for its development, transmitting the power obtained by electricity to nearby points for lighting and power purposes.

Savannah—Water-works Improvement.—It is reported that the city will expend \$25,000 in improving water-works. Address The Mayor.

Valdosta—Sash and Door Factory.—Valdosta Sash & Door Co., it is reported, will rebuild plant reported burned at a loss of \$30,000.

Waycross—Car and Locomotive Shops.—

Plans and specifications have been completed for the grading, sewerage, water supply, brick and steel buildings and all other work in connection with construction of the Atlantic Coast Line Railroad Co.'s car and locomotive shops, previously reported as to be built at a cost of about \$500,000. Plant will include roundhouse, oilhouse, storehouse, machine and erecting shop, blacksmith shop, coach shop, paint shop, planing mill, foundry, pattern storehouse, dry-kiln and frame freight-car repair shed. Proposals are invited until January 29 to cover the plant completed, except machinery and mechanical equipment. A \$2000 deposit will be required with each proposal. Plans can be seen at office of R. E. Smith, general superintendent motive power, Atlantic Coast Line Railroad Co., Wilmington, N. C.

KENTUCKY.

Louisville—Grain Elevator.—Kentucky Public Elevator Co. has accepted plans for proposed \$100,000 addition to elevator, giving a total capacity of 1,000,000 bushels, doubling the present output. The improvements will consist of a series of 10 steel bins and the installation of additional machinery.

Louisville—Tobacco Company.—States' Tobacco Warehouse Co. has been incorporated with \$25,000 capital stock by George C. Turner, J. Chester Turner and H. C. Heimerdinger to continue the business of Turner Bros., tobacco dealers.

Louisville—Skating Rink, etc.—Chartered: Princess Skating Rink & Amusement Co., with \$10,000 capital stock, by Charles B. Norton, R. S. Brown, C. B. Nordeman, J. Ed. Kent, W. Allen Kinney and others, to establish skating rink, gymnasium and natatorium. Site has been secured on which to erect \$10,000 building.

Louisville—Refrigerating Plant.—Ice cream Factory, etc.—A company is being organized with \$75,000 capital stock and William Heuser, president, and Charles Heuser, secretary-treasurer, for the establishment of refrigerating plant and ice-cream factory. A site has been purchased 100x185 feet, on which to erect a two-story brick building. A 50-ton ice plant will be installed.

Louisville—Veneer Mills.—It is reported that St. Marc O. Mundy, representing local parties, has purchased site on which to erect a \$75,000 veneer mill, and a company will be organized to operate the plant.

Louisville—Coffee Company.—Chartered: Louisville Coffee Co., with \$15,000 capital stock, by C. W. White, C. C. White and others.

Louisville—Manufacturing.—Louisville Laboratory & Manufacturing Co. has increased capital stock from \$6000 to \$25,000.

Louisville—Bed Factory.—The King Settee Folding Bed Co. has been incorporated with \$5000 capital stock by Charles C. Stoll, Chas. B. Nordeman and Daniel F. King.

McBryer—Distillery.—Old Prentice Distillery, reported incorporated last week, is an established plant, having been operated for many years by J. T. S. Brown & Son of Louisville, Ky.

Pikeville—Coal-mining.—Reports state that the Island Creek Coal & Coke Co. will establish coal-mining plant.

Pikeville—Planing Mills.—It is reported that the Pike Hardwood Co., recently organized, will operate six planing mills near Pikeville.

LOUISIANA.

Gueydan—Cotton Gin and Feed Mill.—Gueydan Gin & Mill Co. has been incorporated with \$5000 capital stock to erect and operate a two-story cotton gin and feed mill. Later it is proposed to add a small sugar refinery. Henry L. Gueydan is president; A. L. Croom, vice-president; E. E. Broussard, secretary, and John G. Neelis, treasurer. Mr. Gueydan and associates were reported in September as to erect cotton gin.

Jennings—Supply Company.—Chartered: Planters' Supply Co., with \$35,000 capital stock, H. W. Lanse is president; D. R. Swift, vice-president, and Rudolph Oaksmith, secretary-treasurer, all of Lake Charles, La.

New Orleans—Manufacturing.—It is reported that Steve Ciolina has purchased site on which to locate factory building. It is stated that Chicago (Ill.) parties are interested in the enterprise.

New Orleans—Automobile Works, etc.—The Tracy Automobile, Ltd., has been incorporated with \$50,000 capital stock to manufacture and deal in automobiles, etc. Washington J. Tracy is president, and William P. Tracy, secretary-treasurer.

New Orleans—Brewery.—Val Merz is reported as organizing company with \$150,000 capital stock to establish brewery.

New Orleans—Power Plant.—Consumers' Electric Co. is completing arrangements for the erection of proposed power-house; to be

of brick and steel construction and cost \$40,000.

MARYLAND.

Frederick—Iron Works.—It is reported that Washington (D. C.) and Pennsylvania parties have purchased the Montrose Iron Works, operated by T. M. Diven and W. T. S. Diven, improving and operating same on an enlarged scale. It is stated that the Messrs. Diven will continue with the new company, which will be known as the Frederick Iron Works.

Lonaconing—Electric light-plant Improvements.—The Lonaconing Electric Light & Power Co. has installed a 30-kilowatt generator capable of generating 1800 lights, doubling the present capacity.

MISSISSIPPI.

Cude (not a postoffice)—Saw-mill, etc.—W. J. Cude of Kimmins, Tenn., owning 7000 acres of timber land in Le Flore county, is arranging for the erection of band-saw mill having a capacity of 40,000 feet. Later it is proposed to erect a planing mill of ample capacity. Mr. Cude has already established a townsite at Cude, and building operations are progressing rapidly.

Indianola—Bridge Construction.—It is reported that the Bellefontaine (Ohio) Bridge & Iron Co. has been awarded contract for the construction of proposed steel bridge 25 feet wide.

Jackson—Hardware Company.—Capital City Hardware Co. has been incorporated with \$20,000 capital stock. A. C. Jones is president.

Meridian—Depot.—Alabama & Vicksburg Railway (Queen & Crescent Route) will erect freight depot, but plans and specifications have not been prepared; D. D. Curran, superintendent, New Orleans, La.

Rosedale—Hoop and Stave Factory.—It is reported that R. G. Marcey and Homer F. Gettle will establish a hoop and stave plant.

Vicksburg—Publishing.—Chartered: American Company, with \$10,000 capital stock and privilege of increasing to \$25,000, by E. C. Carroll, E. C. Carroll, Jr., W. F. Carroll, Murry F. Smith and others, to publish the American, a daily newspaper.

MISSOURI.

Brookline—Canning Factory, etc.—Brookline Canning & Milling Co., previously reported incorporated, will operate canning factory with a capacity of 200,000 three-pound cans of tomatoes and 20,000 three-pound cans pumpkins. Plant has been completed. After the canning season is over it is proposed to remodel the plant into a 30-barrel roller-flour mill. H. C. Parrish is secretary.*

Kansas City—Laundry.—J. H. Cravens has purchased site on which to erect three or four-story building and equip as laundry. About \$18,000 will be expended.

Kirkville—Sewerage System.—City, it is reported, will vote in January on the issuance of \$40,000 of bonds for the construction of a public sewer system and septic-tank purification and disposal plant; Stephen Hall, city engineer.

St. Louis—Street paving.—Board of Public Works has awarded paving contracts as follows: Barber Asphalt Paving Co., \$6479.92; J. E. Perkins, \$36,297.18; Heman Construction Co., \$49,925.90; Fruin & Colton, \$44,825.23; Fred Hoffman & Co., \$57,434.56; Wm. K. Busch Construction Co., \$27,745.90; Michael Hanick, \$6762.62; Wm. H. Redeneyer, \$6111.10; Skrainka Construction Co., \$12,276.77; Granite Bituminous Paving Co., \$13,756.

St. Louis—Brass Works.—Eureka Brass Co. has been incorporated with \$50,000 capital stock by Frank Haggenjos, Charles Erickson and John Haggenjos to manufacture and deal in brass.

St. Louis—Construction Company.—Chartered: Wright Gallagher Construction Co., with \$5000 capital stock, by L. B. Wright, A. D. Gallagher and T. B. Gallagher.

St. Louis—Mining.—Mineral Moss Mining Co. has been incorporated with \$50,000 capital stock by F. H. Kandler, W. F. Kandler of St. Louis and Harry A. Lawton of Cleveland, Ohio, to engage in a general mining business.

St. Louis—Car Works.—It is reported that the American Car & Foundry Co. is considering the erection of additional plant in South St. Louis at a cost of \$1,000,000; main offices, Lincoln Trust Building.

St. Louis—Plowing Machine.—Newsom Archimedeon Plowing Machine Co., reported incorporated in November with \$50,000 capital stock, will manufacture a plowing machine. A building will be secured and equipped with three or four thread-milling machines, two hydraulic presses, oil-annealing furnaces, two 24-inch shapers, one 12-inch lathe, one 24-inch lathe, one bending machine, forge and forge tools and other

small tools and equipment. Factory building will be erected later. The company expects to buy gray iron and malleable iron from outside foundries. Saw-steel discs No. 9 gauge, 19 1/2 inches in diameter, and steel tubing 3 inches outside diameter, 1/2-inch thick, in lengths from 6 to 9 feet, will be used in the construction of the machine. J. Q. A. Newsom is president; J. N. Newsom, vice-president, general manager and engineer in charge; Charles N. Ring, secretary, and Hans Wolff, treasurer; main office, Missouri Trust Building.

St. Louis—Railway Equipment.—Busch-Wackman Draft Gear Co. has incorporated with \$25,000 capital stock to manufacture and deal in railway cars, railway equipment, etc.; incorporators, August A. Busch, Adam Wackman, Adolphus Busch, Edward A. Faust and others.

NORTH CAROLINA.

Asheville—Electric-light Plant.—West Asheville Light & Power Co. has been organized by R. P. Hayes, R. O. Patterson and associates to establish plant in West Asheville for furnishing that part of city with electric lights. Steam will be used as motive power.

Charlotte—Ice Plant, etc.—Elba Manufacturing Co. will increase capital stock and arrange at once for the installation of 30-ton ice plant, provision being made for doubling the capacity later on. The company is at present increasing the oil storage by the erection of a 100,000-gallon tank and installing five lifters in oil mill proper. Contracts for machinery and tank have been let. It is proposed to later add machinery to cottonseed-oil mill, making the capacity 100 tons daily.*

Charlotte—Printing Plant.—P. L. Garnes has established printing plant at 16 East 5th street.

Charlotte—Roofing Tile.—Chartered: American Roof & Tile Co., with \$200,000 capital stock, by R. A. Dunn, William C. White and F. M. Sawyer, to manufacture roofing tile patented by Mr. Sawyer.

Charlotte—Real Estate.—Chartered: Suburban Realty Co., with an authorized capital stock of \$250,000, by F. C. Abbott, J. O. Thomas, Wm. F. Harding and others.

Charlotte—Marble and Granite Quarries.—Chartered: Charlotte Marble & Granite Co., with \$25,000 capital stock, by J. N. Hunter, C. L. Newman and Harry Hunter.

Clayton—Drug Company.—Clayton Drug Co. has been incorporated with \$5000 capital stock.

Concord—Woodworking Plant.—J. M. Sills and George S. Klutz are arranging for the establishment of woodworking plant. Contract for machinery has been let.

Franklinville—Cotton Mill.—Franklinville Manufacturing Co. will replace wornout and old machinery with new equipment, and contract for a portion has been awarded to the Saco & Pettie Machine Shops of Newton Upper Falls, Mass.; present equipment 3472 spindles, 90 bag looms, etc.

Garysburg—Saw-mill.—It is reported that the Garysburg Manufacturing Co. has purchased the entire plant of the Burgaw Manufacturing Co., including timber, etc., and will improve the plant and operate to its full capacity.

Goldshoro—Lumber Company.—New River Lumber Co. has been incorporated with an authorized capital stock of \$200,000 by H. Well of Goldshoro, L. Lee of Mt. Olive, N. C., and others.

Greensboro—Supply Company.—Carolina Builders' Supply Co. has been organized to act as selling agents for architectural and structural iron work, lime, cement and plaster, deal in rough and dressed lumber, sash, doors, blinds and mill work; office, 302 1/2 South Elm street.*

Hickory—Milling Company.—The Moore Milling Co. has been incorporated with \$15,000 capital stock by H. L. Moore and associates.

Lillington—Lumber Company.—Chartered: McAllister-Ross Lumber Co., with an authorized capital stock of \$100,000, by T. C. Worth, T. G. McAllister and associates.

Lowell—Cotton Mill and Water-power Development.—Spencer Mountain Mills has amended charter and has permit to issue preferred stock. This action is understood to be the first move in the development of additional water-power to be transmitted by electricity for operating another cotton mill which the company proposes to build. This proposed extension of the plant was mentioned last when the company was making surveys for the extension and reconstruction of its wing dam to develop 1000 horse-power.

Lumberton—Furniture and Carpet Company.—Eagle Furniture & Carpet Co. has been incorporated with \$25,000 capital stock

by W. P. Baker, D. C. McIntyre and J. P. Townsend.

Mooreville—Clothing Factory.—It is reported that the Eagle Clothing Manufacturing Co. will increase capital stock and double the present capacity.

Rocky Mount—Supply Company.—Daughter Supply Co. has been incorporated with \$25,000 capital stock. E. L. Daughtridge is president; J. C. Daughtridge, secretary, and D. D. Daughtridge, treasurer.

Sallsbury—Novelty Works.—John S. Henderson, T. H. Vanderford, W. H. Russell, P. H. Meroney and associates have incorporated the Dixie Manufacturing & Novelty Co. with an authorized capital stock of \$75,000 to manufacture toys and other novelties.

Warsaw—Lumber Company.—Street Bros. Lumber Co. has been incorporated with \$10,000 capital stock by J. A. Street and W. E. Street.

SOUTH CAROLINA.

Columbia—Granite Quarry.—Granby Stone Co. has been incorporated with \$30,000 capital stock by L. W. Haskell, J. J. Cain and associates to operate granite quarries.

Fairplay—Cotton Gln.—The Farmers' Ginnery has been incorporated with \$2000 capital stock.

Hopkins—Saw-mill, Dry-kilns, etc.—C. G. Watson of Danville, Va., will establish saw-mill, dry-kilns, etc.; daily capacity 20,000 feet long-leaf yellow pine.

Killian—Brick Works.—Killian Fire-Brick Co., reported incorporated last week with \$25,000 capital stock to manufacture fire-brick, will operate plant with a daily capacity of 30,000 brick. T. M. Waring is president and treasurer; H. F. Hayne, secretary (both of Charleston, S. C.), and Thos. F. Davis of Killian, superintendent; main office at Charleston, S. C.

Orangeburg—Manufacturing.—William C. Wolfe, Joseph A. Berry and Thomas F. Brantley have incorporated the General Manufacturing Co. with \$2000 capital stock.

Rock Hill—Broom Factory.—The establishment of a broom factory is being contemplated by local parties. John Wood, secretary Commercial Club, can give information.*

Union—Furniture Factory.—Bailey Furniture Manufacturing Co. has increased capital stock from \$20,000 to \$30,000.

Warrenville—Improvement Company.—Valley Improvement Co. has been incorporated with \$5000 capital stock. W. A. Edwards is president and treasurer; James P. Edwards, vice-president, and Claude E. Sawyer, secretary.

Yorkville—Cotton Mill.—W. B. Moore proposes the organization of a \$100,000 stock company to build a cotton mill, the motive power to be electricity obtained from the Catawba Power Co., now operating a water-power-electrical plant.

TENNESSEE.

Chattanooga—Iron and Coal Mines.—Chartered: Chattanooga Iron & Coal Co., with \$500,000 capital stock by F. V. Berry, A. C. Conn, H. Bond and others to mine iron and coal.

Crab Orchard—Marble Quarries.—American Gray Marble Co. has been organized by R. H. Ward, I. A. Hill, S. C. Brown, H. B. Cassell and J. T. Cummins to develop marble deposits on 500 acres of land on which R. H. Ward and associates were mentioned last week as having an option; main office, Hariman, Tenn.*

Elizabethton—Bridge.—The county court of Carter county has authorized the appropriation of \$6000 for the construction of bridge over the Watauga river near Elizabethton, and bids for the work will be asked at once. Address County Clerk.

Memphis—Sauce Factory.—It is reported that Lorenzo Solari contemplates establishing plant for making a sauce to season macaroni. Arrangements will be made at once for the erection of building. About \$25,000 will be invested.

Nashville—Stone Works.—The Bardon-Fulcher Cut Stone Co., recently organized with \$25,000 capital stock, has secured site on which to locate plant. J. P. Fulcher is president; M. E. Barden, vice-president and general manager, and S. D. Wade, secretary-treasurer.

Nashville—Cotton Mill.—The Warloto Cotton Mills, previously reported, will install an equipment of 20,000 spindles and 500 looms in the Tennessee Manufacturing Co. plant which they purchased. Most of the machinery has been purchased. Jos. B. Morgan is secretary-treasurer.

Oakdale—Bridges.—American Bridge Co., 42 Broadway, New York, it is reported, has been awarded contract by the Cincinnati, New Orleans & Texas Railroad Co. for the

erection of eight bridges between Oakwood and Helenwood; cost \$250,000.

TEXAS.

Amarillo—Bridge Construction.—City will vote January 2 on the issuance of \$20,000 of bonds for the construction of bridge at Amarillo. Address City Engineer.

Bryans Mill—Telephone System.—The Atlantic & Naples Telephone Co. has been incorporated with \$5000 capital stock by E. W. King, W. O. Bryan and others to operate telephone system.

Cameron—Bridge.—E. P. Alsbury & Son, Houston, Texas, it is reported, have contract at \$7400 for rebuilding the Faubion bridge across Little river, previously reported.

Cleburne—Street-paving.—H. D. McCoy has been awarded contract at about \$15,000 for paving 68,000 square yards; also 15,000 cubic yards of excavating and 2168 lineal feet of concrete curbing.

Denison—Brick Works.—Denison & Sherman Pressed Brick Co. has been incorporated with \$25,000 capital stock by R. E. Krueger, J. C. King and John Windshelmer to manufacture brick.

Fort Worth—Bridge Works.—Leversedge Bridge & Construction Co. has been incorporated with \$10,000 capital stock by L. S. Leversedge, John H. Leversedge and Helen S. Brannon to build bridges, etc.

Kennedale—Canning Factory.—Kennedale Canning & Preserving Co. has been incorporated with \$25,000 capital stock by M. C. McGraw, John M. Payne and J. A. Hamman to erect and operate canning factory.

Longview—Water-works.—Reports state that the city will install system of water-works at a cost of \$27,000. Address The Mayor.

Lufkin—Oil Wells.—Lufkin Oil Co. has been incorporated with \$10,000 capital stock by R. B. Shearer, J. H. Kurth, J. A. Henderson, W. M. Glenn and associates to drill for oil.

Munday—Cottonseed-oil Mill.—It is reported that S. M. Swenson & Son, 15 Wall street, New York, have organized company to erect and operate a cottonseed-oil mill. Main office will be temporarily located at Stamford, Texas.

Pecos—Land Improvement.—Pecos Land Co., has been incorporated with \$50,000 capital stock by R. D. Gage, F. W. Johnson and J. G. Love.

Raywood—Rice Cultivation, etc.—Raywood Canal & Milling Co. has been organized by W. T. Campbell of Lampasas, Texas; J. D. Crawford of Marshall, Texas; R. E. Brooks, S. S. Cullinan, W. B. Sharp, H. Masterson, A. C. Swanson and E. R. Spotts, all of Houston, Texas, for the cultivation of rice on 27,000 acres of land which has been secured in the vicinity of Raywood. About \$100,000 will be expended in improvements, including the installation of new machinery in rice mill, included in the purchase, and which will be operated to its full capacity.

San Angelo—Cold-storage and Ice Plant.—West Texas Cold Storage & Ice Co. has been incorporated with \$25,000 capital stock by J. T. Neal, W. D. Fuller, J. C. Landon, A. B. Sherwood and J. C. Simmons.

San Antonio—Mining.—Otto Wahrmond, Otto Koehler, A. L. Tuttle, C. H. Hoffman and S. G. Newton have incorporated the Montezuma Mining Co. with \$100,000 capital stock.

San Antonio—Saddlery Factory.—C. O. Daulis, I. Bodenheimer and A. Bodenheimer have incorporated the San Antonio Saddlery Co. with \$5000 capital stock.

Weatherford—Bridge.—The Missouri Valley Bridge & Iron Co. of Leavenworth, Kan., it is reported, has been awarded contract for the construction of bridge across the Brazos river.

Whitesboro—Grist Mill and Cotton Gln.—The Epps Mill & Gln Co. has incorporated with \$25,000 capital stock to operate grist mill and cotton gin; incorporators, C. C. Epps, M. I. Epps, A. J. Traley of Whitesboro and C. A. Andrews of Sherman, Texas.

Yoakum—Cold-storage Plant.—The Yoakum Ice Co. has let contract for the erection of cold-storage plant.

VIRGINIA.

Alexandria—Amusement Company.—Incorporated: The Washington Luna Park Co., with an authorized capital stock of \$165,000, to conduct amusement park. T. H. Treat is president, and J. W. Pitcock, secretary-treasurer.

Leesburg—Public Improvements.—City has voted the proposed \$8000 bond issue for public improvements. Address The Mayor.

Leesburg—Flour Mill.—The W. S. Jenkins Company has incorporated with an author-

ized capital stock of \$100,000 to conduct a general milling business. Joseph M. Fox is president; W. S. Jenkins, general manager and treasurer, both of Leesburg, and C. Shawer, secretary, Waterford, Va.

Lynchburg—Drug Company.—Chartered: Claiborne Drug Co., with an authorized capital stock of \$10,000. C. R. Claiborne is president and treasurer, and John C. Canada, secretary.

Lynchburg—Construction Company.—The D. A. Langhorne Company has incorporated with an authorized capital stock of \$75,000 for general construction purposes. J. L. Pitts of Scottsville, Pa., is president; D. A. Langhorne of Lynchburg, vice-president, and E. T. Morris of Doswell, Va., treasurer.

Martinsville—Brick and Tile Works.—Chartered: Williamson, Hedgecock & Fontaine, Inc., with an authorized capital stock of \$25,000, to manufacture brick, tile, etc. E. L. Williamson of Martinsville is president, and J. A. Hedgecock of Fontaine, Va., vice-president and general manager.

Newport News—Drug Company.—Columbia Pharmacy has been incorporated with an authorized capital stock of \$25,000. Julia P. H. Coleman is president; A. L. Alston, secretary, and W. R. Hughes, treasurer.

Newport News—Street Improvements.—The city is considering holding an election to vote on the issuance of \$100,000 in bonds for street improvements. Address The Mayor.

Norfolk—Real Estate.—Rothe-MacNamara Syndicate has been incorporated with \$5000 capital stock. S. MacNamara is president, and C. E. Sims, secretary-treasurer.

Norfolk—Land Improvement.—Incorporated: Atlantic Corporation, with M. L. Cormick, president, and A. W. Cormick, secretary-treasurer; authorized capital stock \$100,000.

Norfolk—Land Improvement.—Tidewater Home Building Corporation has been incorporated with an authorized capital stock of \$50,000. M. McKann is president; John T. Maddrey, vice-president, and R. S. Jeffries, secretary-treasurer.

Norfolk—Embalmers.—Chartered: Snellings & Snellings, with H. W. Snellings of Norfolk, president, and J. E. Snellings of Portsmouth, Va., secretary-treasurer, to engage in embalming, etc.; authorized capital stock \$25,000.

Norfolk—Navy-yard Improvements.—It is reported that Civil Engineer L. E. Gregory, in the yards and dock department of the navy-yard, is preparing plans for improvements at the navy-yard as follows: The building of a landing float and slip for the reception of loaded freight cars, for which \$45,000 is available; the construction of a 60,000-gallon cistern to receive the drainage from the roofs of several buildings, the water to be used for general purpose, to cost \$20,000, and the installation of \$12,000 fire-alarm system.

Norfolk—Wharf.—John Monk has been awarded contract at \$16,668 by the government for the construction of wharf at Old Point in connection with the submarine mining operations.

Petersburg—Trunk and Bag Factory.—H. D. Thacker Trunk & Bag Co. has incorporated with an authorized capital stock of \$25,000 to manufacture and deal in trunks and bags. H. D. Thacker is president; R. Carr, secretary, and Roland Gill, treasurer.

Petersburg—Sewerage System.—City has let contract to the Southern Construction Co. of Norfolk, Va., for the excavating work and laying of pipes in connection with sewerage system, previously reported, and for which \$75,000 is available. Stratton & Bragg have contract for furnishing pipe.

Richmond—Cigar Factory.—It is reported that the American Cigar Co. (Whitlock branch) has purchased site on which to erect three-story brick addition to be used as storage and box department, removing this department from its present quarters in the factory building, utilizing the entire building for the manufacture of cigars, and installing additional equipment to increase capacity from 200,000,000 to 300,000,000 cigars yearly. Plans for the building are being prepared; main office, New York, N. Y.

Richmond—Advertising, etc.—Incorporated: The Burton System, with an authorized capital stock of \$100,000, to engage in advertising and billposting. W. S. Burton is president; W. W. Workman, secretary, and W. A. Klevesahl, treasurer. A three-story building 50x165 feet will be erected at a cost of \$15,000; no machinery desired.

Richmond—Land Improvement.—Cathedral Heights Land Corporation has been incorporated with an authorized capital stock of \$100,000. A. R. Ellerson of Hanover county, Virginia, is president, and W. H. Urquhart of Richmond, secretary-treasurer.

Richmond—Printing Plant.—David Bottom,

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Fox is pres-
anager and
C. Shaver,

Chartered:
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ne is presi-
Canada, sec-

pany.—The
incorporated
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resident, and
insurer.

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Fontaine,
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etc. E. L.
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Cathedral
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county,
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Bottom,

superintendent of public printing, has sub-
mitted a report estimating the cost at \$50,000
for the establishment of a printing plant for
the State.

Richmond—Locomotive Works.—American
Locomotive Works (main office, 111 Broad-
way, New York) will erect an addition to
boiler shop; to be 134x162 feet, of steel con-
struction with corrugated-iron sides. (This
item was recently mentioned.)

Turbeville—Telephone System.—Dan River
Telephone Co. has incorporated with an au-
thorized capital stock of \$5000 to operate tele-
phone system. W. B. Wilkins is president,
and John A. Owen, secretary.

WEST VIRGINIA.

Aracoma (P. O. Logan)—Coal Mines and
Coke Ovens.—Fridmullens Coal & Coke Co.
has incorporated with \$125,000 capital stock
to mine coal and manufacture coke; incorpo-
rators, M. B. Mullens, May Mullens of Logan,
Charles D. Fridman of New Richmond, Ohio;
William M. Fridman of Cincinnati, Ohio, and
C. W. Campbell of Huntington, W. Va.

Charleston—Hardware Company.—Goshorn
Hardware Co. has been incorporated with
\$75,000 capital stock by W. F. Goshorn, H. D.
Goshorn, J. A. de Gruyter, W. A. MacCorkle
and associates.

Charleston—Power-house.—Kanawha Valley
Traction Co. has let contract to Isaac & Crew
for the construction of proposed power-
house; to be of brick and iron 80x90 feet, sur-
mounted by a brick stack 125 feet high. It is
proposed to install two Corliss engines, each
of 500 horse-power, to drive a direct-connected
General Electric generator of 300-kilowatt ca-
pacity; steam to be supplied by a battery of
four boilers aggregating 1200 horse-power.
Machinery has been purchased.

Charleston—Oil and Gas Wells.—Chartered:
New York Oil & Gas Co., with \$100,000 capital
stock, by R. M. Snyder, R. M. Snyder, Jr.,
R. A. Long, M. M. Sweetman and Hugh M.
Dixon, all of Kansas City, Mo., to drill for
oil and gas.

Charlestown—Farming Implements.—Farm-
ers' Supply Co. has been incorporated with
\$25,000 capital stock by John C. Burns, W. H.
Lock, W. A. Higgs and associates to deal in
farming implements, vehicles, etc.

Coalburg—Match Factory.—Reports state
that the American Match Co. will enlarge
plant; main office, New York, N. Y.

Elizabeth—Printing Plant.—Elizabeth Print-
ing Co. has been incorporated with \$5000 ca-
pital stock by C. W. Roberts, I. R. Mattingly,
Geo. M. Thompson and associates to conduct
a printing plant.

Follansbee—Sheet-steel and Tinplate Plant.
The recent report is correct that the Fol-
lansbee Bros. Company will build an open-
hearth steel plant adjacent to its present
plant, producing black plates for tinning, etc.
The company telegraphs the Manufacturers'
Record that it will build three 15-ton basic
open-hearth furnaces with a capacity of
from 100 to 150 tons daily, and the bar mill
will be complete with large hammer, hy-
draulic shears, electric cranes, etc. New
buildings will include a 400x60-foot structure
with a 40-foot addition, and the product of
the plant will be the highest attainable tin-
plate and sheets for special requirements;
main office of the company at Pittsburgh, Pa.

Guyandotte—Bridge.—Reports state that
the Brackett Bridge Co., 518 Walnut street,
Cincinnati, Ohio, has contract for construct-
ing proposed bridge.

Hobson—Water Grist Mill.—A. H. Godwin
is erecting a water grist mill for grinding
corn into table meal; building two stories,
20x24 feet. An overshot wheel 18 feet in
diameter is also being constructed. Later it
is proposed to install buckwheat huller and
fixtures.

Huntington—Oil and Gas Wells.—Henry C.
Simms, Frank B. Enslow, R. M. Baker, C. L.
Porter and S. H. Moore have incorporated
the Border Oil & Gas Co. with \$200,000 capital
stock to drill for oil and gas.

Martinsburg—Vehicle Works.—The Vehicle
Co. reported incorporated last week with
\$10,000 capital stock to manufacture vehicles,
will erect three-story building, 40x65 feet.
Max Robinson is president, and S. R. Snod-
grass, secretary-treasurer.

Parkersburg—Printing Plant.—Chartered:
Parkersburg Printing Co., with \$10,000 ca-
pital stock, by J. C. Buck, W. Macy Brents, B.
E. Hanes, H. P. Camden and others, to en-
gage in printing and publishing.

Pennsboro—Electric Plant.—Hope Electric
Co. has incorporated with \$5000 capital stock
to construct and equip electric plants; incor-
porators, M. K. Duty, C. H. Broadwater, T.
E. Clovis, Floyd Giebell and associates.

Princeton—Cement-block Factory.—Prince-
ton Brick & Lumber Co., recently reported
incorporated to manufacture and deal in

brick, etc., will also install machinery for
manufacturing cement blocks.*

Schell—Coal-mining.—Glad Run Coal &
Coke Co. is now developing its coal prop-
erties near Schell and will shortly begin ship-
ping coal.

Wheeling—Bridge Works.—The West Vir-
ginia Bridge & Construction Co. of Wheeling
and the New Jersey Bridge Co. of Trenton,
N. J., have consolidated and organized the
New Jersey & West Virginia Bridge Co., with
\$500,000 capital stock.

INDIAN TERRITORY.

McCurtain—Reservoir.—It is reported that
the Sans Bois Coal Co. is arranging for the
construction of reservoir near coke ovens
previously reported to be constructed, and
for which contract has been let. About 40
acres of land will be required.

Okmulgee—Water-works Improvement.—
Burns & McDonnell, Kansas City, Mo., it is
reported, have been engaged to prepare plans
and specifications for proposed extension to
water-works.

OKLAHOMA TERRITORY.

Alva—Washing Machine.—The Atmospheric
Washing Machine Co. has been incorporated
with \$50,000 capital stock by John H. Schaefer,
F. H. Myers, H. H. Sherman, F. W. Hanford
and associates.

Guthrie—Coal Mines.—The Kentucky Coal
Mining Co. of Guthrie and Dayton, Ohio,
has been incorporated with \$2,000,000 capital
stock by I. R. Layer and N. M. Metz of Day-
ton, Ohio; Charles A. Baker of Indianapolis,
Ind.; G. V. Pattison, L. E. Pentecost and H.
W. Pentecost of Guthrie and associates to
mine coal.

Hennessey—Publishing.—Annette B. Has-
kett of Hennessey, Ira D. Mullinax and Geo.
L. Bowman of Kingfisher, O. T., and others
have incorporated the Press-Democrat Pub-
lishing Co. with \$2000 capital.

Hobart—Townships.—Chartered: South-
western Township and Colonization Co., with
\$1,000,000 capital stock, by Frank Costello, H.
C. Lloyd, M. L. Standeven, C. D. Gillette, O.
K. Benedict, B. M. Lovelace, G. M. Medley,
W. C. Brady and associates.

Hobart—Water-works.—The Mayor and
Council will receive bids until January 9 for
drawing plans and specifications for the ex-
tension of about four miles of six-inch water
mains and the erection of water tower of
about 100,000 gallons capacity in connection
with the water-works system. Usual rights
reserved; A. W. Kerr, city clerk.

Lawton—Mining.—L. C. Myer, G. N. Gribble
and C. H. Milliken have incorporated the
Knead More Mining Co. with \$1,500,000 capital
stock.

Norman—Hardware Company.—Hullman-
Taylor-Minteer Hardware Co. has been in-
corporated with \$15,000 capital stock by J. A.
Hullman, John Taylor and J. C. Minteer.

Oklahoma City—Office Supplies.—Char-
tered: The Manly Office Supply Co., with
\$5000 capital stock, by Homer E. Manly,
Grace Manly and Effie M. Manly.

Oklahoma City—Chemical Works.—Western
Chemical & Manufacturing Co. of Oklahoma
City and St. Louis, Mo., has been incorpo-
rated with \$100,000 capital stock by J. M. Be-
dient of Kansas City, Mo.; C. A. Karr of El
Reno, O. T., and R. D. Reynolds of Mountain
View, O. T.

Oklahoma City—Coal Mines.—Chartered:
The Three-Seam Coal Co. of Oklahoma City
and Cincinnati, Ohio, with \$300,000 capital
stock, by Ralph J. Ramer of Oklahoma City,
George Rapp and E. F. Weiss of Cincinnati,
Ohio.

Tecumseh—Twineholder.—Chartered: Gage
Twineholder Co., with \$2500 capital stock, by
Oscar A. Gage, Guy A. Ruggles and James
C. Tarlo.

BURNED.

Avalon, Texas.—A. J. Wight's cotton gin.

Demopolis, Ala.—Wood Lumber Co.'s plant;
loss \$10,000.

Hagerstown, Md.—Hagerstown Storage &
Transfer Co.'s building; loss \$18,000.

Little Rock, Ark.—Fred Roesch's wagon and
carriage shop; loss \$15,000.

Louisville, Ky.—Jefferson county court-
house damaged; estimated loss between \$10,
000 and \$30,000. Address County Judge.

Lufkin, Texas.—Long-Bell Lumber Co.'s
saw-mill; loss \$50,000; main office, Kansas
City, Mo.

Martinsville, Va.—George M. Finlay's to-
bacco factory; loss \$15,000.

Moultrie, Ga.—A. Simmons & Co.'s bakery.

Sparks, Ga.—The Commercial Hotel; loss

Weleetka, I. T.—Canadian Valley Ice, Light
& Power Co.'s plant; loss \$40,000.

BUILDING NOTES.

*Means machinery, proposals or supplies
are wanted, particulars of which will be
found under head of "Machinery, Proposals
and Supplies Wanted."

Asheville, N. C.—Telephone Building.—W.
H. Lord, architect, 11 Church street, will re-
ceive bids until January 18 for the construc-
tion and entire completion of a central-ex-
change building for the Asheville Telephone
& Telegraph Co. Certified check for \$100 must
accompany each bid. Plans and specifications
on file at architect's office.

Atlanta, Ga.—Theater.—It is reported that
J. B. Thompson, proprietor of the New Star
Theater, has purchased buildings 144-148 Ma-
rietta street, which will be rebuilt as theater
at a cost of about \$20,000.

Augusta, Ga.—Warehouses.—People's Ice
Co., Chas. T. Tansberg, president, is erecting
two brick warehouses to cost about \$8500, to
be occupied by the National Packing Co. and
Swartzschild-Sulzberger Company.*

Austin, Texas—Dwellings.—D. W. Caswell,
Sr., will erect two residences at a cost of
\$5000 each.

Birmingham, Ala.—Office Building.—Empire
Construction Co., recently incorporated with
Ross C. Smith, president, has purchased site
on which to erect a 15-story office building.

Birmingham, Ala.—Building.—W. B. Leedy
& Co. have secured permit for the erection
of \$5500 building.

Birmingham, Ala.—Warehouse.—Birming-
ham Building & Improvement Co. has con-
tract to erect two-story warehouse, 75x185
feet, of ordinary construction, for Lyon,
Bryan & Haas, 2109 First avenue; cost \$12,000.
Three freight elevators will be installed.*

Bristol, Va.—Tenn.—Building.—The Stone-
Hulling Lumber Co. has purchased site on
which to erect \$18,000 building.

Brooklandville, Md.—Depot.—It is reported
that the Northern Central Railway has let
contract to J. J. Walsh & Son, 1525 Maryland
avenue, Baltimore, Md., for the erection of
proposed \$10,000 depot.

Chattanooga, Tenn.—Fire Station.—Board
of Public Works, A. L. Thomas, chairman,
will open bids January 9 for the construction
of a fire hall in the Ninth ward according to
plans and specifications on file at office of R.
H. Hunt, architect. A certified check for
\$250, payable to the city treasurer, must ac-
company each bid. Usual rights reserved.
(Previously mentioned.)

Clayton, Mo.—Store and Warehouses.—J. G.
Weber Hardware & Supply Co., recently re-
ported incorporated, will erect store and
warehouse 26x66 feet and warehouse 26x18
feet; cost \$5000.

Concord, N. C.—Lodge Building.—The I. O.
O. F. and Jr. O. U. A. M. are arranging for
the erection of a three-story brick building,
32x100 feet. Plans have not been decided on.
S. W. Williams is chairman of building com-
mittee for I. O. O. F., and James F. Harris,
chairman for Jr. O. U. A. M.

Concord, N. C.—Office Building.—Dr. L. M.
Archie has had plans prepared for a two-
story office building, 40x100 feet, of brick.

Dallas, Texas—Flat Buildings.—Herman
Coffman has purchased site on which to erect
three two-story flat buildings to cost \$15,000.

Covington, Ga.—Bank Building.—Bank of
Covington has adopted plans for the erection
of proposed marble building. John F. Hen-
derson is president.

Cumberland, Md.—Store and Warehouse.—
Maryland Cereal Co., recently incorporated
by E. L. Shearer and associates, has pur-
chased site 100x140 feet and will erect modern
storeroom and warehouse.

Dallas, Texas—School Building.—Arrange-
ments are being made for the erection of \$20,
000 school building for the Sacred Heart
Church, Father Hayes, pastor.

Davidson, N. C.—Dormitory.—The dormi-
tory to be erected by Davidson College, for
which Hook & Rogers, Charlotte, N. C., were
reported recently as preparing plans, will be
a 24-room building of ordinary construction,
equipped with semi-indirect steam-heating
plant, electric lights, and cost \$12,000.

Denison, Texas—Union Depot.—It is report-
ed that plans and specifications are being
prepared for a three-story brick building
with stone trimmings to be erected by the
Missouri, Kansas & Texas Railway. S. B.
Fisher, chief engineer, St. Louis, Mo., and
other roads entering Denison. An electric
elevator and steam-heating plant will be in-
stalled.

Fayetteville, N. C.—School Building.—Plans

and specifications have been completed for
proposed \$10,000 school building. Address The
Mayor.

Fayetteville, N. C.—Bank Building.—First
National Bank is having plans prepared by
H. E. Bonitz, Wilmington, N. C., for remodel-
ing the Kyle Building as bank building.

Fort Logan H. Roots, Ark.—Officers' Quar-
ters, etc.—Bids will be received until January
26 by quartermaster, Fort Logan H. Roots,
Ark., or Robert R. Stevens, chief quartermas-
ter, San Antonio, Texas, for construction,
plumbing, heating and electric wiring
of one set quarters for field officers, one set
of quarters for bachelor officers, two bar-
racks, two kitchens and mess halls and two
lavatories. Bidders are required to furnish
the name and place of business of the manu-
facturer or manufacturers who will furnish
the materials. Information furnished on ap-
plication. United States reserves usual rights.

Fort Worth, Texas—Hospital.—Sisters of
the Incarnate Word of St. Joseph's Hospital
have adopted plans by Alfred Giles for the
erection of a four-story addition to hospital
at a cost of \$70,000.

Galveston, Texas—Warehouse.—W. J. Chap-
man Company, reported incorporated recent-
ly, will erect warehouse 50x100 feet.

Galveston, Texas—Roundhouse, etc.—It is
reported that the Trinity & Brazos Valley
Railway, M. Sweeney, general manager,
Brazos, Texas, will erect roundhouse and
freight terminals.

Greensboro, N. C.—Building.—Central Caro-
lina Construction Co. has contract to erect
building for the Keeley Institute after plans
by S. W. Foulk & Son; to be two stories of
frame construction, 40x80 feet; equipped with
hot-water-heating plant, electric and gas fix-
tures, and cost \$10,575.*

Hagerstown, Md.—Warehouse.—It is re-
ported that the Hagerstown Storage & Trans-
fer Co. will erect fireproof building, replacing
structure reported burned.

Hannibal, Mo.—Church.—First Methodist
Church is reported as to erect stone and
pressed-brick edifice to cost \$25,000. C. J.
Chase is pastor.

High Point, N. C.—Church.—Plans by
Wheeler, Runge & Dickey have been adopted
for proposed \$20,000 edifice for the High Point
Methodist Church.

Houston, Texas—Store Building.—Bering-
Cortes Hardware Co., mentioned last week,
will rebuild store building recently burned,
but the character of building has not been
decided on.

Houston, Texas—Building.—Jos. F. Meyer
will erect a three-story brick building.

Houston, Texas—Building.—Charles H.
Winn has contract to erect two-story build-
ing for John H. Kirby after plans by Steele
& Fountain.

Joplin, Mo.—Jail and Fire Station.—The
jail and fire station previously reported to
be erected by the city will be 70x100 feet, of
brick, stone or concrete, and cost \$25,000.
Steam or hot-water heating plant, electric
and gas fixtures will be installed. Plans have
not yet been adopted; C. W. Lyon, mayor.

Joplin, Mo.—Business Block.—The Joplin
Undertaking & Embalming Co. has purchased
site on which to erect a three-story brick
business block.

Kansas City, Mo.—Clubhouse.—The Kansas
City Turnverein Society has secured permit
for the erection of proposed two-story club-
house, 75x120 feet, to cost \$27,000.

Lancaster, Ky.—Hotel.—The Hotel Garrard
Co. has been organized for the erection of a
hotel.

Little Rock, Ark.—Lodge Building.—The
local lodges Knights of Pythias contemplate
the erection of lodge building to cost about
\$75,000. Address B. W. Bartlett, secretary
joint building committee.

Little Rock, Ark.—City Hall and Auditori-
um.—Board of Public Affairs is arranging
for the erection of city hall and auditorium,
for which \$150,000 was previously reported
appropriated. Architect has not been se-
lected.

Louisville, Ky.—Automobile Garage.—Prince
Wells, 814 Fourth avenue, has let contract
for the erection of automobile garage, men-
tioned last week; to be two stories, 47x200
feet, of semireproof and mill construction,
equipped with hot-water-heating plant, elec-
tric lights, electric elevators, etc. Hutchings
& Hawes prepared the plans.

Memphis, Tenn.—Warehouse.—It is report-
ed that the Pittsburg Steel Co. is arranging
for the erection of warehouses at Memphis,
Louisville, Ky., and New Orleans, La.; gen-
eral offices, 307 Fourth avenue, Pittsburg, Pa.

Memphis, Tenn.—Theater.—F. W. Faxon &
Co., it is reported, will organize company
for the erection of theater to cost \$50,000 and
have a seating capacity of 1500.

Memphis, Tenn.—Dwelling.—A permit has been secured for the erection of a two-story brick veneer residence for George T. Brodnax to cost \$7000. L. M. Weathers & Co. prepared the plans.

Mobile, Ala.—Telephone Exchange.—Home Telephone Co. has let contract to E. J. Pike at \$25,000 for the erection of proposed telephone exchange building to be two stories, of brick and terra-cotta, absolutely fireproof.

Mobile, Ala.—Synagogue.—Plans by Watkins, Hutchinson & Garvin have been adopted for proposed brick and stone synagogue. J. Pollock is chairman of building committee.

Monte Ne (P. O. Vinola), Ark.—Bank Building.—A. E. Martin has contract for the erection of proposed \$5000 building for the Bank of Monte Ne.

Nashville, Tenn.—Hotel Improvements.—It is reported that the Maxwell House Co. will build three additional stories to hotel and make other improvements.

Nashville, Tenn.—Church.—The official board of McKendree Church has decided to erect \$75,000 edifice on the site of burned structure. Address The Pastor.

Natchitoches, La.—College Building.—Plans by Favrot & Livaudais, New Orleans, La., have been adopted and contract will be awarded in January for building for the State Normal School; to be two stories, 250x65 feet, of brick and stone, hardwood finish, ordinary construction, to have fan system, indirect steam heating plant, electric lights, and cost \$80,000.

New Iberia, La.—Courthouse Improvements.—E. Q. Phillips, architect, is receiving bids for a two-story addition to courthouse; cost \$5000.

New Orleans, La.—Bank and Office Building.—Canal-Louisiana Bank & Trust Co. will erect 10-story bank and office building; to be of steel fireproof construction, with pressed brick and terra-cotta trimmings; estimated cost of complete structure \$800,000.

Newport News, Va.—Bank Building.—R. H. Richardson & Son of Hampton, Va., have contract for the erection of bank building for Schmelz Bros., for which P. Thornton Marye, Atlanta, Ga., was previously reported as preparing plans; to be 26x100 feet, of fireproof construction, brick, stone and terra-cotta; equipped with hot-water-heating plant, and cost \$250,000.

Newport News, Va.—Bank Building.—J. C. Curtis (not Curtis & Bro., as previously mentioned) has contract to erect one-story building for the Newport News National Bank.

Norfolk, Va.—Fire Station.—Bids will be received until January 10 at the office of F. F. Ferguson and C. J. Calow, architects, 221 Carpenter Building, until January 10 for the erection of fire-engine house in the Sixth ward. Plans may be had after January 3 at the architects' office on deposit of certified check for \$10. Certified check for \$500, payable to the city treasurer, must accompany each bid. Usual rights reserved.

Olympia, Ky.—Hotel Improvements.—Plans by Ed. L. Williams, Mt. Sterling, Ky., have been adopted by the Olympia Springs Co. for addition to hotel.

Richmond, Va.—Hotel Improvements.—E. Henry Gilbert will expend \$20,000 in remodeling and improving Gilbert's Hotel.

Richmond, Va.—Apartment-house.—Arnold Eberhard, Commercial Bank Building, is preparing plans for seven-story apartment-house to be erected by R. B. Fontress.

San Antonio, Texas.—Hotel.—The Hot Sulphur Wells Hotel, recently purchased by I. M. Putnam of Oklahoma City, O. T., will be repaired and equipped with new bathtubs and furnishings. The management contemplates also building an annex of 100 to 200 rooms. F. M. Swearingen has leased the property.

Savannah, Ga.—School Building.—Bids will be received until January 10 for erecting school building. Plans, specifications and further information will be furnished by Otis Ashmore, superintendent. Usual rights reserved.

Shawnee, O. T.—Building.—Peters & Nethercot are preparing plans for a three-story building, 50x120 feet, of brick and stone with tin roof, to be erected by F. A. Stone at a cost of \$16,000. Electric and gas fixtures, modern plumbing, steam-heating plant, etc., will be installed.

Slidell, La.—Bank Building.—The Bank of Slidell, recently organized with F. Salmen, president, will erect a \$10,000 brick building.

Slidell, La.—School Building.—Town has voted the proposed five-mill tax for the erection of \$10,000 school building. Address Town Clerk.

St. Augustine, Fla.—Building.—Sealed bids marked "Proposals for Construction" and addressed to Fred A. Henderich, architect,

will be received until January 15 for furnishing material and constructing the Record Building; plans and specifications on file at the architect's office. Usual rights reserved.

St. Louis, Mo.—Office Building.—Rolla Wells has secured through the Joseph Whyte Real Estate Co. site on which to erect a 16-story office building.

Swainsboro, Ga.—Building.—J. L. Carmichael has had plans prepared for a three-story brick building.

Swainsboro, Ga.—Business Block.—John C. Coleman has had plans prepared for a brick and stone business block.

Swainsboro, Ga.—Store Buildings.—H. C. Edenfeldt will erect two store buildings.

Tallahassee, Fla.—Governor's Mansion.—The Governor's Mansion Commission has secured site on which to erect proposed building, and J. N. C. Stockton has been appointed to confer with architects relative to plans and specifications.

Versailles, Ky.—Association Building.—Young Men's Christian Association is considering the erection of \$10,000 building.

Washington, D. C.—Dwellings.—Alexander Miller, builder, 1215 Ohio avenue, will erect three three-story brick dwellings at 33, 35 and 37 Rhode Island avenue to cost about \$12,000.

Washington, D. C.—Car Barn and Offices.—The Capital Traction Co., 36th and M streets N. W., has had plans prepared by Wood, Donn & Deming, architects, 808 17th street N. W., for car barn and office to be erected on 14th street extended; the building will be 200x500 feet.

Washington, D. C.—Apartment-house.—Plugge, Leitz & Plugge will erect four-story brick apartment-house at 1861 Calvert street to cost about \$25,000; Appleton P. Clark, Jr., architect and builder, 605 F street N. W.

Washington, D. C.—Apartment-house.—Alonso O. Bliss, Bliss Building, 35-39 B street N. W., will erect apartment-house on B near 1st street N. W.; four stories, 22.6x32 feet; brick with stone trimmings; slag roof; fireproof partitions; electric wiring and fixtures; sanitary plumbing; heating system. Estimates on construction are now being taken; A. Goener, architect, Bliss Building, 35-39 B street N. W.

Washington, D. C.—Apartment-house.—Alonso O. Bliss, Bliss Building, 35-39 B street N. W., has commissioned A. Goener, architect, Bliss Building, to prepare plans and specifications for apartment-house to be erected on 4th street near G street N. W.; four stories, 27x35 feet; brick with stone trimmings; slag roof; electric wiring and fixtures; sanitary plumbing; heating system.

Washington, D. C.—Dwellings.—C. H. Herr will erect a number of dwellings at northeast corner 24th and N streets N. W.; two stories; brick with stone trimmings; sanitary plumbing; hot-water-heating systems. M. H. Herriman, 224 12th street S. E., and George Loewler, 806 Florida avenue N. W., are estimating on the construction; Hunter & Bell, architects, 1019 F street N. W.

Washington, D. C.—Dwellings.—M. H. Meyers has commissioned B. Frank Meyers, architect, Bond Building, 14th street and New York avenue, to prepare plans and specifications for 12 dwellings to be erected on Park road near Mt. Pleasant street; 2½ stories; brick with stone trimmings; electric wiring and fixtures; sanitary plumbing; hot-water-heating systems.

Washington, D. C.—Convenience Station.—Henry B. F. Macfarland, Henry L. West and John Biddle, District commissioners, have rejected all bids submitted for the construction of public convenience station in Reservation 7 and will revise the plans and take new bids.

Washington, D. C.—Dwellings.—Points & Mockabee, builders, 734 15th street N. W., will erect nine two-story dwellings at 525 to 541 Quincy street, to cost \$22,500.

Washington, D. C.—Apartment-house.—Wm. C. Freeman, builder, 26 Q street N. W., will erect three-story apartment-house at 26 S street N. W., to cost \$13,500; Harry Blake, architect.

Washington, D. C.—School.—Mrs. Elizabeth J. Somers, principal of Mt. Vernon Seminary, 1109 M street, will erect a building for the use of seminary near Wyoming street between 23d and 24th streets.

Waycross, Ga.—Railroad Shop Buildings.—Atlantic Coast Line Railroad Co., R. E. Smith, general superintendent motive power, Wilmington, N. C., will receive proposals until January 29 for erection of buildings for car and locomotive shops at Waycross, Ga. (See detailed item in another column under Waycross under general heading of Georgia.)

West Palm Beach, Fla.—Dwelling.—George Haselhurst & Son have contract to erect

\$5000 residence for D. J. Krauss after plans by Emil A. Ehnmann.

Wheeling, W. Va.—Office Building.—River-side Bridge Co. of Wheeling has contract for the steelwork, and Caldwell & Drake, Columbus, Ind., for brick and stone work on office building to be erected by Henry Schmulbach, for which Giesey & Faris were previously reported as preparing plans; to be 100x127 feet, of fireproof construction, and cost \$600,000. Electric fixtures, four passenger, one freight and two sidewalk elevators (for which contract has been let) will be installed.

Wheeling, W. Va.—Office Building.—Giesey & Faris are preparing plans for the proposed Reymann Building; to be 10 stories, 48x128 feet, of steel fireproof construction, and cost about \$250,000.

Wilmington, N. C.—Dwelling.—J. A. Brown has had plans prepared by H. E. Bonitz for the erection of \$15,000 residence at Chadbourne.

Wilmington, N. C.—Business Building.—John F. Garrell is having plans prepared by H. E. Bonitz for three-story brick building with plate-glass front.

RAILROAD CONSTRUCTION.

Railways.

Ablene, Texas.—Reported that Edward S. Hughes of Abilene and Dallas, who is associated with others in the proposed line, has made a contract with the towns of Abilene and Anson, Texas, to build a railroad from Abilene northward via Anson to connect with either the Kansas City, Mexico & Orient Railway or the Wichita Valley Railway at Stamford. D. T. Bonar, president of the Fidelity Trust Co. of Fort Worth is also said to be interested.

Albany, Ga.—The Georgia Northern Railway has, it is reported, purchased property in Albany for terminals, and has applied to the city council for permission to lay tracks. J. N. Pidecock, Jr., is president and general manager at Moultrie, Ga.

Albany, Ga.—Reported that the Central of Georgia Railway will spend \$60,000 for yard improvements at Albany, and will also extend from Florida, Ala., to Pensacola, Fla. H. M. Steele is chief engineer at Savannah, Ga.

Anderson, S. C.—The Anderson Traction Co. has, it is reported, determined to build the proposed line to Belton, 10 miles. It is also said that the company intends to extend the line 25 miles further via Williamston, Pelzer and Piedmont to Greenville, S. C.

Asheville, N. C.—The Asheville Southern Railway Co. has been chartered by A. B. Andrews and other officials of the Southern Railway. It is to build a line five miles long from Asheville to North Woodsee and across the French Broad river. W. H. Wells is engineer of construction at Washington, D. C.

Atlanta, Ga.—Reported that the Atlantic Coast Line contemplates an extension from Macon, Ga., to Atlanta, 88 miles; also possibly a cutoff from Vidalia to near Jesup, Ga., 60 miles. E. B. Pleasants is chief engineer at Wilmington, N. C.

Augusta, Ga.—The Augusta & Elberton Railroad Co., which proposes to build a line 60 miles long from Augusta to Elberton, Ga., has, it is reported, placed \$60,000 of bonds and will build 15 miles of line immediately out of Augusta. The officers are Eugene F. Verdery, president; G. H. Nixon, vice-president; W. K. Kitchen, treasurer, and F. T. Lockhart, secretary. The directors are Jas. U. Jackson, Gwin Nixon, D. F. Jack and J. P. Armstrong. It is said that contracts for ties and other material will be let immediately.

Beaufort, N. C.—The Beaufort & Western Railway has, it is reported, let a contract to the General Contracting & Engineering Co., 15 Whitehall street, New York, to build its proposed line between Beaufort and Morehead City, N. C., three miles.

Beaumont, Texas.—W. R. Smith, chief engineer of the Kenefick, Hammond & Quigley Construction Co., has made a trip over the proposed extension of the Beaumont, Sour Lake & Western Railway from Sour Lake as far as Humble, Texas. The survey is nearly finished and construction will begin as soon as all right of way is secured.

Birmingham, Ala.—Reported that the Dan-marcus Coal Co., controlled by Birmingham capitalists, will build a spur track from a connection with the Frisco system near the Warrior river to reach new mines.

Dalton, Ga.—Mr. J. M. Sanders writes the Manufacturers' Record that application has been made to charter the Dalton & Allendale Railway to build a line from Dalton to the foot of Fort Mountain. It is expected to organize, begin survey and secure right of way in the latter part of January. The line will be about 22 miles long via Spring Place and

Chatsworth. H. C. Hamilton of Dalton, Ga., it is understood, will be engineer in charge; officers not yet elected.

Blytheville, Ark.—The Paragould South-eastern Railway Co. has, it is reported, completed plans to build an extension of one mile from Chickasawba to Blytheville.

Bristol, Tenn.—Reported that the Virginia & Southwestern Railway has let a construction contract to a Knoxville firm, and that subcontracts are to be undertaken soon at various points. J. B. Newton is general manager.

Caruthersville, Mo.—The Caruthersville & Western Railway Co. has been chartered to build a line 12 miles long from Caruthersville to Deering, Mo. The incorporators are J. M. Blower of Chicago, H. C. Schultz, S. F. Reynolds and S. C. Randolph of Caruthersville, Mo.

Covington, Ga.—Capt. F. D. Ballard will, it is reported, build a railroad from Covington to his farm at Stewart, 13 miles.

Cumberland, Md.—J. Q. Barlow, chief engineer of the Western Maryland Railroad, is reported as saying that as soon as the Cumberland extension is completed the further extension to connect with the Wabash system will be taken up. Already surveys are being made between Cumberland, Meyersdale and Uniontown, Pa. The Cumberland extension, 65 miles long, is to be completed this month, all being practically done except the Kessler tunnel.

Duncan, I. T.—The New State Central Railroad Co. proposes to build from either Lehigh or Coalgate via Duncan to Lawton, O. T., about 200 miles. Robert Chowning is president, and W. H. Hackbush, chief engineer, both of Lehigh, I. T. G. E. Blackwelder is also said to be interested.

Earle, Ark.—The Crittenden Railroad, owned by the Crittenden Lumber Co., is reported to have completed 15 miles of line from Earle to Heath, Ark.

Fayetteville, W. Va.—Reported that the Fayetteville & Beckley Railroad Co. has been chartered to build an extension of the Fayette & Fayetteville Electric Railway via Oak-hill, Glen Jean, Mount Hope and Prosperity to Beckley, W. Va., about 30 miles. A. D. Roberts, Ben D. Kountz, J. R. Kyle, Edmund R. French and W. B. Jones, all of Fayetteville, are the incorporators.

Granite, O. T.—The Kansas, Oklahoma, Texas & Gulf Railway will, it is reported, begin construction in February on a line from Granite to the Eggleston Industrial Co.'s plant, 35 miles west. There will also be a spur three miles long at Granite. Thos. L. Eggleston of Granite is president.

Houston, Texas.—Reported that the Houston, Sabine & Red River Valley Railway will award contracts after noon on January 15 to build 10 miles more of line. Ed. Kennedy is general manager.

Houston, Texas.—Reported that John H. Kirby of Houston, W. Weiss of Beaumont and others will incorporate a railroad to be built from a point on the Trinity & Brazos Valley Railway's extension north of Houston to Burr's Ferry on the Sabine river, about 50 miles.

Houston, Texas.—A. V. Kellogg, engineer maintenance of way of the Galveston, Harrisburg & San Antonio Railway, is reported as saying that it will build three and a half miles of line for a cutoff between Glidden on the main line and the seventh milepost on the Lagrange branch. W. S. Hipp of Houston has the contract.

Huntsville, Texas.—Mr. John L. Wortham, financial agent of the State penitentiary board, referring to the report that a railroad six miles long would be built by the State from the William Clemens Convict Plantation in Brazoria county to connect with the Gulf Coast Line, writes the Manufacturers' Record saying that it is contemplated to build the road some time during 1906, but only in time to handle the sugar crop on the State farm, which begins to move in November.

Jackson, Miss.—The Capital Transportation Co. has prepared its charter and proposes to build a line from Jackson to Ridgeland, Madison Station, Canton, Clinton, Raymond, Cooper's Wells, Terry and Crystal Springs, to be completed in part by January 1, 1907. The charter provides for running either electric or steam cars on the streets of Jackson. The incorporators are Secretary of State J. W. Power, Joseph McDonnell, George F. McDonnell and H. E. Blakeslee.

Jackson, Miss.—Mr. R. V. Taylor, general manager of the Mobile & Ohio Railroad at St. Louis, Mo., writes the Manufacturers' Record denying the press report that the company would build a line in the Pearl River valley in Mississippi.

Johnson City, Tenn.—Engineers for the South & Western Railway are reported to be staking out a line on the route of the old project to build the three C's road for some distance north of Johnson City. M. J. Caples is chief engineer at Bristol, Tenn.

Kansas City, Mo.—The Kansas City, Lees Summit & Eastern Electric Railroad Co. is reported to have made a survey for 30 miles, and the company, it is said, desires to communicate with parties who will finance the road, which is to eventually be 350 or 400 miles long. W. F. Johnson, 410 Junction Building, Kansas City, is president.

Kingsville, Texas.—Jeff N. Miller, general manager of the St. Louis, Brownsville & Mexico Railway, is quoted as confirming the report that the extension from Robstown to Bay City has been completed. It is also expected that in 60 or 70 days the line from Bay City to a point near Alvin, Texas, will be completed, when trains will be operated to Houston and Galveston in connection with the Santa Fe.

Lexington, Ky.—Preliminary survey for the electric railway between Lexington and Winchester, Ky., is reported being made by W. A. Newman, county surveyor, under the direction of R. T. Gun, general manager.

Lexington, O. T.—The secretary of the Oklahoma City, Lexington & Sulphur Springs Electric Railway is reported as saying it has filed a mortgage to secure bonds for \$2,750,000, and that within a few days the entire line will be put under construction. George A. Teague and others are interested.

Little Rock, Ark.—President John Scullin of the St. Louis & North Arkansas Railroad is quoted as saying that the company will probably build from Leslie, Ark., to Helena or some other point on the Mississippi river, and if this is done a branch will be built to Little Rock. S. W. Lee is chief engineer at Eureka Springs, Ark.

Louisville, Ky.—Reported that control of the Louisville & Eastern Electric Railway, extending from Louisville to Beard's Station, has been purchased by Joseph T. Elliott & Sons and Gates & Co. of Indianapolis, Ind., that they are refinancing the company and will build an extension to Lagrange and Shelbyville, Ky.

Miami, Mo.—Reported that W. K. Palmer, 718 Dwight Building, Kansas City, Mo., is making surveys for the Central Railway of Missouri, which is to be 50 miles long from Miami via Marshall to Sedalia, Mo.

Mountain City, Tenn.—J. Walter Wright is reported as saying that T. W. Thayer & Co., successors to the Helena Lumber Co., are finishing their railroad from Damascus, Va., to Mountain City to develop timber lands of their own as well as those of the Shaffer interests and the Whiting Lumber Co. The Virginia & Southwestern Railway is also reported to be building a spur a mile long from Shoun's Cross Roads to a mine, and the McCain interests are expected to build three miles to timber lands.

Morehead, Ky.—Reported that E. W. Haas of Clearfield, Pa., is chief engineer of the Morehead & North Fork Railroad Co., recently incorporated to build a line about 14 miles long, including one tunnel, from Morehead westward to the north fork of the Licking river.

New Orleans, La.—Thornwell Fay, vice-president and general manager, is reported as saying that 111 miles of Morgan's Louisiana & Texas Railroad, from New Orleans to Lafayette, La., will be relaid with 90-pound rails.

Norfolk, Va.—The Tidewater Railway Co. is reported to be building a branch two miles long to the exposition grounds at Sewell's Point. H. Fernstrom is chief engineer at Norfolk.

Paducah, Ky.—Reported that the Paducah & Cairo Electric Railway has been financed and that John Lane, the contractor, will begin grading immediately. A later report says that grading has begun.

Pawhuska, I. T.—The Oklahoma & Western Railroad Co. has been chartered to build a line from or near Pawhuska to Kenton in Beaver county, Oklahoma Territory, with headquarters at Chicago, Ill., and Alva, O. T. The line, when completed, is to be 400 miles long; capital \$8,000,000. The directors are Geo. W. Graham, Paul D. House, Sidney H. Sellig and Sol Fichtenberg, all of Chicago, and J. A. Stine, John A. Hartshorne and H. A. Noah of Alva, O. T.

Port Arthur, Texas.—John W. Gates will, it is reported, build a railway from Port Arthur to Houston, about 90 miles. Mr. Gates' address is at the Rookery Building, Chicago.

Quanah, Texas.—Reported that the St. Louis & San Francisco Railway is surveying for a line from Quanah to El Paso, Texas,

about 400 miles. J. F. Hinckley is chief engineer at St. Louis, Mo.

Roanoke, Va.—The Norfolk & Western Railway will, it is reported, spend \$1,000,000 to enlarge the Roanoke yards and shops in 1906, this amount having been appropriated recently by the directors. C. S. Churchill is chief engineer at Roanoke. He writes the Manufacturers' Record as follows: "We have been at work enlarging Roanoke yards during the last year, and we propose to prosecute this work during the year 1906. Mr. David W. Flickwir of Roanoke has contract for the extension of west end of Roanoke yard, to be done this year."

Rogersville, Tenn.—The Holston River Railway Co. has been chartered to build a line from Rogersville, or near here, to a point near Bristol, Tenn., about 20 or 25 miles. J. H. Frantz, one of the incorporators, is quoted as saying that construction will begin in the spring, but he denies a report that the Virginia & Southwestern Railway, with which connection will be made, is interested. The other incorporators are J. B. Wright, Howard Cornick, Charles O. Lutz and John M. Thornburg, all of Knoxville.

Ruby, S. C.—President A. H. Page of the Chesterfield & Lancaster Railway is reported as saying that grading has begun on the extension from Ruby to Lancaster, 18 miles, and it is expected to complete four miles in January. C. H. Scott is chief engineer at Ruby. O. H. Page & Son of Cheraw, S. C., are the contractors.

Rush Springs, I. T.—The Rock Island system will, it is reported, build a branch 16 miles long from Rush Springs to Charlie, O. T. J. B. Berry is chief engineer at Chicago.

St. Louis, Mo.—The St. Louis, Hillsboro & Southern Electric Railway Co. is reported to be making surveys from St. Louis to Richmond, Mo., 60 miles, starting at Mannion's Park and going via Carondelet, Telegraph road, Bobring's, Lemay Ferry, Luxembourg, Butler's Lake, Burnesville, Regina, Morse Hill and Hillsboro. The capital of the company is \$1,250,000, and the officers are R. E. Williams, president; H. D. Brand, secretary; J. H. Weiner of Morse Hill, Mo., assistant secretary; L. D. Winter, treasurer, and H. M. Bowen of Alton, Ill., general manager.

Stoneville, Miss.—The Stoneville & Southwestern Railroad Co. has applied for a charter to build a line from Stoneville southwest to Ben Lomond on the Mississippi river. The incorporators are R. W. Garrison, F. H. Ivy and C. A. Douglas, all of Leland, Miss. The Yazoo & Mississippi Valley Railroad is said to be interested.

Tulsa, I. T.—D. B. Morey of Tulsa has, it is reported, been appointed chief engineer for the proposed Tulsa, Texas & Gulf Railway, which is designed to run from Tulsa via San Antonio, Texas, to Matagorda Bay.

Vicksburg, Miss.—Reported that actual construction has begun on the branch of the Yazoo-Mississippi Valley Railway from Kelso to Silver City.

Waco, Texas.—Judge George Clark, counsel for the company, is reported as saying that the extension of the Texas Central Railroad will be built immediately from Stamford for a distance of 42 miles via Aspermont.

Waynesburg, Pa.—Reported that the Waynesburg & Washington Railroad will be extended southward to Dotsburg and finally into West Virginia. C. E. Bower is superintendent at Waynesburg.

Wheeling, W. Va.—J. V. Thompson of Uniontown, Pa., is reported to have financed the construction plans for the proposed Uniontown & Wheeling Shore Line (Ohio & Marshall Railroad) with a loan of \$10,000,000, and it is said that bids for construction will be opened soon. D. F. Maroney, 908 Farmers' Bank Building, Pittsburgh, is president.

Yoakum, Texas.—The San Antonio & Aransas Pass Railway will, it is reported, begin immediately laying new rails on its line between Yoakum and Kenedy.

Street Railways.

Anderson, S. C.—J. E. Sirrine of Greenwood, S. C., will, it is reported, be in charge of construction for the Anderson Traction Co.'s extension to Belton, S. C. Bids for construction have not yet been requested.

Baltimore, Md.—The United Railways & Electric Co. has given a contract to David E. Evans of Baltimore to build three and a half miles of its double-track extension from Sparrows Point to North Point, which will be altogether about four and a half miles long, the Maryland Steel Co. building the other mile, Sanford & Brooks of Baltimore doing the pile work for bridge construction.

Gadsden, Ala.—The Alabama City, Gadsden & Attalla Railway will, it is reported, immediately extend its lines in Gadsden. J. A. Gaboury is general manager.

Hopkinsville, Ky.—Wright & Southgate of Nashville, Tenn., it is reported, will immediately begin a survey for the proposed street railway to be built by John H. Bell and others, who have the franchise.

Jackson, Miss.—Reported that John Lorenz, formerly manager of the Jackson Electric Railway, Light & Power Co., will build an electric railway from Jackson to Clinton, Miss., and possibly to Vicksburg.

MACHINERY, PROPOSALS AND SUPPLIES WANTED.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The Manufacturers' Record has received during the week the following particulars as to machinery that is wanted.

Boiler.—See "Engine and Boiler."
Brick Machinery.—J. M. Lackey, Lincoln, N. C., wants to correspond with manufacturers of brick machinery and equipment; daily capacity 50,000 to 100,000 bricks.

Broom Machinery.—John Wood, secretary Commercial Club, Rock Hill, S. C., wants information regarding machinery and equipment for broom factory.

Building Materials.—Firth-Sterling Steel Co., Pittsburg, Pa., J. R. Rose, engineer in charge, will be in the market for building and foundation brick, cement, sand, gravel, lumber, piling, glass and window sashes, roofing materials, bolts, nails, hardware, pipe, fittings and other supplies for building to be erected near Washington, D. C.

Building Materials.—Carolina Builders' Supply Co., 302½ South Elm street, Greensboro, N. C., wants to correspond with manufacturers relative to agencies for roofing materials of all kinds, building paper, lime, cement, plaster, structural iron and steel, columns, composition architectural terra-cotta, sewer pipe, brick, etc.

Canal-dredging.—Bids will be received until January 26 at the office of Burke & Burke, attorneys, New Iberia, La., for dredging canals for the Petite Anse-Coteau drainage district in Iberia parish, La.; total length 110,000 and 435,000 cubic yards of excavation work. For further particulars apply to Burke & Burke, New Iberia, La., or Walter Y. Kemper, engineer, Franklin, La.

Cannery Equipment.—W. H. Smith, Jefferson, Ga., wants addresses of manufacturers of equipment for cannery factory.

Cement-block Machinery.—Princeton Brick & Lumber Co., Princeton, W. Va., will be in the market for machinery for making cement blocks.

Concrete-block Machinery.—The J. L. Roark Estate, Greenville, Ky., wants catalogues and prices on machinery for making concrete building blocks, ornamental pieces, etc.

Contractors' Supplies.—Carolina Builders' Supply Co., 302½ South Elm street, Greensboro, N. C., wants to correspond with manufacturers of contractors' supplies relative to securing agencies.

Conveying Machinery.—People's Ice Co., Chas. T. Tansberg, president, Augusta, Ga., will probably be in the market for beef rails.

Conveying Machinery.—See "Crushing Machinery."

Crushing Machinery.—Collinsville Granite Co., 51 North Pryor street, Atlanta, Ga., wants a second-hand rock crusher of 150 to 200 tons capacity for 10 hours; also other machinery needed in crushing stone, such as engine, boiler, conveyors, etc.

Diemakers.—A. V. Oldham, Louisville, Ky., wants addresses of manufacturers of dies for salt and pepper shaker tops; manufacturers near Louisville preferred.

Drug-factory Equipment.—Atlanta Antiseptic Co., Atlanta, Ga., wants catalogues from manufacturers of mixers for liquids and dentifrices, collapsible tubes and tube fillers; also a tooth-powder mixer.

Electrical Equipment.—City of South Pittsburg, Tenn., W. H. Wilson, mayor, will want supplies for putting electric-light plant in good condition and extending new wires.

Electrical Machinery, Engines, etc.—Bids will be received until January 23 at office of D. W. Ross, general purchasing officer Ist-

hian Canal Commission, Washington, D. C., for five-kilowatt D. C. engines and dynamos and switchboards, etc. Blanks and information may be obtained at office of purchasing agent or offices of assistant purchasing agents, 21 State street, New York; Customhouse, New Orleans, La.; 36 New Montgomery street, San Francisco, Cal., and 410 Chamber of Commerce Building, Tacoma, Wash.; also from chief quartermaster, Department of the Lakes, Chicago; depot quartermaster, St. Louis; depot quartermaster, Jeffersonville, Ind.; chief quartermaster, Department of Gulf, Atlanta, Ga., and Commercial Club, Mobile, Ala.

Electric Wiring.—See Building Note under Fort Logan H. Roots, Ark.

Elevators.—Lyon, Bryan & Haas, 2109 First avenue, Birmingham, Ala., will be in the market for three freight elevators.

Engine.—Post Pipe Co., Texarkana, Texas, wants Corliss engine, 15x48 inches, with heavy flywheel, slow motion and of best make; give price and complete history.

Engine and Boiler.—Collinsville Granite Co., 51 North Pryor street, Atlanta, Ga., wants engine and boiler. (See "Crushing Machinery.")

Engine and Boiler.—Winston Mill Supply Co., Winston, N. C., wants to secure the agency for some good engine and boiler house.

Flour and Feed Mill.—S. M. Lyon, Pulaski, Va., wants prices on flour and feed mill.

Flour-mill Machinery.—Brookline Canning & Milling Co., Brookline, Mo., wants prices on machinery and equipment for a 30-barrel roller-flour mill. (Have a 70-horse-power engine and 12-horse-power engine.)

Heating Apparatus.—Committee on Buildings and Supplies of the Lynchburg School Board will open bids January 12 for the installation of heating and ventilating apparatus for an eight-room school building to be erected in Rivermont. Plans and specifications may be secured by application to E. C. Wiley, consulting engineer, Lynchburg National Bank Building. Usual rights reserved.

Heating Apparatus.—See Building Note under Fort Logan H. Roots, Ark.

Hoisting Equipment.—See "Ice Plant."

Ice Plant.—Ella Manufacturing Co., Charlotte, N. C., is in the market for machinery and equipment for 30-ton ice plant, including refrigerating machines, circulating pumps, freezing tanks, condensers, distilling apparatus, insulating material, ice holsts, etc.

Laundry Machinery.—J. T. Duncan, Douglasville, Ga., wants addresses of manufacturers of laundry machinery; plant to be equipped for town of 1500 population.

Marble-working Machinery.—See "Quarrying Equipment."

Mill Supplies.—Rosser Kaue, Bealeton, Va., is in the market for second-hand pulleys and belting.

Paper tube Machinery.—The American Commission Co., Atlanta, Ga., wants addresses of manufacturers of machinery for making the paper cones and paper tubes used in cotton mills.

Piping.—See "Building Materials."

Piping.—See "Water-works Supplies."

Piping.—M. A. Giles, Dayton, Va., is in the market for small iron pipe about one-half inch in diameter.

Piping.—Sealed proposals will be received by the Board of Awards of Baltimore, Md., at the office of Harry F. Hooper, city register, City Hall, until January 10 for furnishing 642 feet of 10-inch wrought-iron pipe to the Water Board. Specifications may be obtained from Alfred M. Quick, water engineer, City Hall.

Plumbing.—See Building Note under Fort Logan H. Roots, Ark.

Pump.—See "Water-works Supplies."

Quarrying Equipment.—See "Crushing Machinery."

Quarrying Equipment.—American Gray Marble Co. wants prices on machinery and equipment for quarrying marble. Address R. H. Ward, Harriman, Tenn.

Railway Equipment.—Joseph E. Bowen, 201-202 Bank of Commerce Building, Norfolk, Va., is in the market for some small 36-inch-gauge saddle tank locomotives for North Carolina delivery.

Railway Equipment.—Southern Purchasing Agency, Valdosta, Ga., is in the market for 200 tons of 25-pound or 30-pound relaying rails for Southern delivery.

Railway Equipment.—Southern Roofing Co., Atlanta, Ga., is in the market for two tank cars of 6000 gallons or more capacity, with steam coil.

Railway Equipment.—W. C. Porter, Laurel, Miss., wants one second-hand rebuilt standard-gauge flat car, 50,000 pounds capacity;

automatic couplers, improved air brake. State condition and price.

Roofing.—See "Building Materials."

Roofing.—Central Carolina Construction Co., Greensboro, N. C., wants prices on 75 squares BX22 slates (Buckingham or equal).

Sand removal Contract.—A. F. Langford of Valdosta, Ga., now located at Perry, Fla., has about 247,000 cubic yards of sand to move—all section work, no team work on it—and would supply about 100,000 yards to responsible party.

Saw mill Machinery.—Winston Mill Supply Co., Winston, N. C., wants to correspond with manufacturers of saw-mill machinery and supplies relative to securing the agency.

Sewerage System.—Board of Public Works, Gainesville, Fla., will open bids January 25 for constructing sanitary sewerage system and furnishing material. Work will embrace approximately 15 miles of pipe sewers from 6 to 15 inches in diameter. Certified check for \$1000 or a satisfactory guaranteed bidder's bond must accompany each bid. Plans and specifications will be on file and may be seen at office of Wm. M. Lyon, engineer, and copies of specifications and forms, etc., may be obtained from W. Wade Hampton, secretary Board of Public Works. Usual rights reserved.

Shoe Machinery.—Roy C. Miller, Essex Building, Norfolk, Va., is in the market for a machine to sew the second or half sole of shoe to the front or original sole; second-hand, in good condition, preferred.

Steel Towers.—Bids will be received by City Comptroller, Shreveport, La., until February 13 for furnishing material and labor and erecting one structural-steel tower for fire-alarm bell, approximate weight of 10½ tons. Plans and specifications and blanks will be furnished by city engineer; all bids to be accompanied by certified check of 10 per cent. of amount of bid. City reserves usual rights, and will require a bond of 50 per cent. of amount of work. Bids to be on ton basis.

Steam Vessel.—Bids will be received until January 21 at the office of the Lighthouse Board, Washington, D. C., for furnishing material and labor of all kinds necessary for the construction and delivery of the single-screw steel steam light vessel No. 84 in accordance with specifications, copies of which, with blank proposals and other information, may be had on application to Rear-Admiral B. P. Lambertson, U. S. N., chairman.

Steel Braces.—"Steel Brace," care Manufacturers' Record, Baltimore, Md., wants steel braces for casket handles in gross lots.

Tank.—See "Water-works Supplies."

Tank and Tower.—See "Water works."

The Manufacturers.—J. M. Conerly, Wana-maker, S. C., wants to correspond with manufacturers of drainage tiles; Southern manufacturers preferred.

Vehicles.—Elba Manufacturing Co., Charlotte, N. C., will be in the market for ice wagons, coal wagons and carts.

Veneering Machinery.—W. C. Hammond, Ashboro, N. C., is in the market for an outfit to saw quarter-oak veneering.

Watchman's Clocks.—Independent Manufacturing Co., Castle Hayne, N. C., is in the market for an improved watchman's clock.

Water-works.—Bids will be received until February 3 by the quartermaster, Fort Fremont, S. C., for extending water-distribution system at Fort Fremont in accordance with plans and specifications on file. For blank proposals and further information apply to Quartermaster, Fort Fremont, S. C.; Sam R. Jones, chief quartermaster.

Water-works.—Board of Improvement, Osceola, Ark., will receive sealed bids until January 10 for construction of water-works, specifications of which will be furnished on application. (Previous reports gave \$30,000 as cost.)

Water-works.—H. L. J. Barnes, clerk, Macon, Miss., will receive bids until January 9 for furnishing all material and erecting tank and tower, filter plant, clear-water basin and a raw water basin as per plans and specifications on file; J. O. Faser, mayor; Wm. F. Wilcox, engineer, Jackson, Miss.

Water-works Equipment.—L. A. Pearre, De Queen, Ark., will open bids February 15 for the purchase of cast-iron water pipe, valves, pumps and boilers necessary for the construction of a system of water-works. Specifications and list of requirements may be had by addressing the O'Neil Engineering Co., Dallas, Texas. Usual rights reserved.

Water-works Supplies.—Board of Public Works, T. J. Youmans, chairman, Arcadia, Fla., will be in the market for water-works supplies. A six-inch artesian well will be driven; a 50,000-gallon-capacity water tank, 100 feet from ground to bottom of tank,

erected; four, six and eight-inch mains and duplex pumps will be used.

Well drilling.—See "Water-works Supplies."

Woodworking Machinery.—See "Veneering Machinery."

Wireworking Machinery.—William Bernard, Fredericksburg, Va., wants addresses of manufacturers of machinery for making wire screens, fenders, etc.

Woodworking Machinery.—Rosser Kane, Bealeton, Va., is in the market for second-hand saws, saw tables, resawing machine, planer and matcher.

MEXICO.

Brewery.—The Cerveceria Cuatremoc, Monterey, State of Nuevo Leon, will make a number of additions to its brewery. The plans provide for two batteries of boilers of 1000 horse-power, a general office building, a two-story bottling-house equipped with improved bottling machinery and a four-story stock-house.

Masonic Temple.—Porfirio Trevino Arreola, civil engineer and architect, Monterey, has contract to prepare plans and erect three-story Masonic Temple in Monterey, State of Nuevo Leon, to cost \$30,000.

Mining.—The Lustre Mining Co., Pittsburg, Pa., U. S. A., is arranging to increase its capital stock from \$1,000,000 to \$5,000,000. This company owns mines in the State of Durango, and the additional capital will be used for new machinery, sinking new shafts and new power plants and other improvements necessary to bring its capacity to 1000 tons per day. H. D. Gamble is president, and W. H. Tebbetts, treasurer of the company.

Naval Stores.—W. B. Conoley, H. Y. Tillman, J. B. Martin and others of Valdosta, Ga., U. S. A., are contemplating the establishment of a naval-stores enterprise in Mexico.

Railroad Station.—The National & International Railroad Co. will, it is reported, erect new two-story stone station in Monterey, State of Nuevo Leon; R. T. McDonald, chief engineer, City of Mexico.

Rubber Factory.—The Anglo-Mexicana Rubber Co. has awarded contract to W. E. Giesecke, contractor and civil engineer, Torreon, State of Coahuila, for the construction of \$100,000 rubber factory in Saltillo, State of Coahuila.

Railways.

Steam Railroad.—The Hidalgo & Northeastern Railway will, it is reported, be extended soon to Tuxpan. Gabriel Manera is general manager at the City of Mexico.

Steam Railroad.—The Great Mineral Railroad of Mexico will, it is reported, be built in the State of Chihuahua by M. B. Place of Pittsburg, Pa., and associates. This will involve the building of extensions from 28 kilometers of narrow-gauge line owned by the Pittsburg San Jose Railroad & Reduction Co. and running out of San Jose del Sitio.

Steam Railroad.—The Mexican Central Railway has, it is reported, purchased 1000 acres of land near Manzanillo on the Pacific coast and will build terminal yards to accommodate the Manzanillo extension. Lewis Kingman is chief engineer at the City of Mexico.

Steam Railroad.—Reported that the Jalisco & Michoacan Railway Co. has practically decided to build its line from Guadalajara towards Chapala, Mexico. Among those interested are William V. Bachus of the City of Mexico, besides the following officers: Carlos Laguno del Hoyo of Zamora, Mexico, president; Ignacio Carranza, secretary; Jose R. Carral, treasurer, and Juan Dudlan, a director, all of the City of Mexico.

Steam Railroad.—A concession has been granted to Richard Honey, president and manager of the International and Mortgage Bank of the City of Mexico, to build a railroad from Pachuca, capital of the State of Hidalgo, to the port of Tampico. Ten kilometers must be built within two and a-half years, and at least 20 kilometers must be built each year thereafter.

Steam Railroad.—John Henderson has been granted a concession to build a railroad from Port Lobos to Caborca in the State of Sonora, 10 kilometers to be completed within 18 months.

Death of Frank C. Raible.

It is with great regret that the E. C. Atkins & Co. corporation of Indianapolis, Ind., announces the death of Frank C. Raible, advertising manager for that enterprise. Mr. Raible's services were highly successful in making public the merits of the E. C. Atkins saws and other manufactures for the lumber industry, and his personal qualities were such as endeared him to his friends and to the business world with which he had relations.

INDUSTRIAL NEWS OF INTEREST

Relaying Steel Rails Offered.

Buyers of railway construction materials are advised that Joseph E. Bowen, 901-902 Bank of Commerce Building, Norfolk, Va., has purchased several miles of 20, 25, 30 and 50-pound relaying steel rails which he offers at attractive prices.

North Carolina Timber Lands.

Buyers of Southern timber lands are invited to address W. M. Pratt of Marion, N. C. Mr. Pratt offers for sale 4000 acres of hardwood timber land estimated to contain 15,000,000 feet of lumber. He will send full details to inquirers.

Southwestern Mercantile Agency.

Merchants and other business men of the South who have occasion to place collections and adjustments and obtain commercial reports and credit registers are invited to address the Southwestern Mercantile Agency, Ltd., 408 Morris Building, New Orleans, La.

Ideas for Agricultural Implements.

Those who may be in a position to supply information regarding new patents or practical ideas relative to agricultural implements which can be made and marketed in the South are invited to correspond with "Manufacturer," 64 Vanderhorst street, Charleston, S. C.

Textile Equipment for Sale.

The complete mechanical equipment of a textile mill is now being offered for sale by Messrs. Myers & Co. of Norfolk, Va. Purchases may be made as a whole or in part. Contemplating buyers are referred to Messrs. Myers & Co.'s advertisement in another column for detailed list of the various machines.

Robb-Mumford Boiler Co.

Boiler purchasers are invited to note that the Robb-Mumford Boiler Co., successor to Edward Kendall & Sons, Cambridge, Mass., has removed its offices and plant to the new location at South Framingham, Mass. The company has a new plant at South Framingham, and correspondence should be addressed to that city in future.

Sawyer Belting Co.

Dealers in and purchasers of belting who are interested in the products of the Sawyer Belting Co. of East Cambridge, Mass., are advised to note that the company named changed the location of its manufacturing plant to Cleveland, Ohio, on January 1. This company is well known as a manufacturer of stitched canvas belting.

Seafie Company Has Contract.

The machine shop building of the Midland Steel Co. at Cooks Ferry, Pa., now in course of construction, is to be completed soon. Other structures for the same plant will soon be under way. Contract for all the structural-steel work has been awarded to the Wm. B. Seafie & Sons Company of Pittsburg, Pa., and involves a large tonnage.

A Manufacturing Investment.

An opportunity for investment in a Southern enterprise is being offered those who may be interested. It calls for a party to join in subscribing to \$500,000 of preferred 10 per cent. stock for enlarging an industry or enterprise which is showing excellent results. Information can be obtained by addressing T. W. T., care Manufacturers' Record.

A Manager Seeks Engagement.

An experienced man is seeking an engagement as superintendent, manager or some other position of trust. He states he is experienced in cottonseed oil, sulphuric acid, fertilizer, ice, tar, turpentine and heavy chemical trades. Manufacturers desirous of corresponding can address "Energy," care of the Manufacturers' Record, and their letters will be forwarded.

Wants a Furniture Factory.

Endeavors are being made to locate a furniture factory at Lebanon, Ky. It is stated that the opportunities for the enterprise are good, there being no competition, and plenty of oak and other suitable lumber being at hand. A party with capital who may be interested in this opportunity can address J. L. Hilpp, secretary of the Lebanon Commercial Club, for full particulars.

Wagon Works for Sale.

There is an established wagon works in the South the minority or controlling interest of which is being offered for sale. It is

stated by the owner that the plant covers five acres of ground, is fully equipped, has an established trade, and offers an excellent opportunity for investment. Particulars can be obtained by addressing Wagon Plant, care of the Manufacturers' Record.

Manufacturing Plant for Sale.

The owners are offering for sale a large manufacturing plant located near Boston and New York on Boston & Maine Railroad. Their plant contains over 75,000 square feet of space, warehouse of 5000 square feet and office building, all in good condition. Boilers, engines, shafting, belting, etc., are in position. Particulars as to terms of sale can be obtained by addressing Room 1311, Hanover Bank Building, New York.

Good Southern Contracts.

People who are interested in the awarding of contracts for jail and courthouse work are advised to note that the firm of Messrs. Wagener & Dobson, contractors and builders, Montgomery, Ala., has been dissolved and changed to F. M. Dobson. Contracts have been closed for a fireproof jail at Lumpkin, Ga., for \$145,000, and for jail work at Cordele, Ga.; Morgan, Ga.; Clanton, Ala., and for courthouse at Rockford, Ala.

Furniture Factory for Sale.

An opportunity for the purchase of a furniture factory is seen in legal notification that the plant of the Virginia Furniture Co. at Chase City, Va., will be sold at public auction on January 18. The plant includes five acres of land, factory buildings, 100-horse-power boiler, engine, woodworking machinery, equipment for factory and office use, lumber, glass, completed stock, etc. For details address T. E. Roberts and C. J. Faulkner, receivers for the company.

Big Tube Mills Contract.

Among the contracts that Messrs. F. L. Smith & Co., cement engineers and makers of cement machinery, 41 Cortlandt street, New York, have recently taken is one for 17 of their large-size tube mills for the Pacific Portland Cement Co., Cement, Cal., and another one for 24 kominuters and tube mills for the new plant of the Lehigh Portland Cement Co. at Fogelsville, Pa. Three additional kominuters are now being installed at the mill "H" plant of the Lehigh Company.

To Retard Crystallization.

The Ohio Retarder Co. of Port Clinton, Ohio, manufactures an article in the form of a powder which is to retard the "set" or crystallization of calcined gypsum or plaster of paris. The company has a strictly fireproof mill of steel, iron and concrete, and has operated this plant day and night since it was built. It will furnish gratis information concerning the manufacture of wall plaster, and invites correspondence from parties who may desire to investigate the plaster business with a view to installing mixing mills in the South.

Important Railway Contract.

An important contract has just been placed by the Louisville & Nashville Railroad through its general purchasing office in Louisville, it having contracted with the Weir Frog Co. of Cincinnati for the supply of all its frogs and switches for 1906. This award gives practical testimony to the excellence of the Weir Company's product and facilities, since it is a renewal of a contract held many times by this company, and continuously held since the Weir Company moved into its new plant at Norwood, one of the suburbs of Cincinnati.

Motors in Marble Industry.

The Westinghouse Electric & Manufacturing Co. of Pittsburg is finding an extensive field for its motor equipments in the marble-finishing industry. It lately completed the equipment of a large marble-yard in the South. The operation of this plant by means of electric drive has been eminently satisfactory, resulting in a marked increase in the product and a decrease in the operating cost. The electrification of the plant has further eliminated the many objectionable features of belting and shafting which were very much in evidence under the old conditions.

Furniture Factory for Sale.

A complete furniture-manufacturing plant located near Bristol, Tenn., is offered for sale. It includes 300 horse-power electric plant for power and lighting, blacksmith shop, foundry, machine shop, bending-room, dry-kill, offices, storehouses and all other

structures and equipment of modern machinery for producing furniture. Plenty of suitable wood is obtainable. Messrs. John C. Anderson and C. J. St. John, trustees of Ordway Manufacturing Co., Bristol, Tenn.-Va., can give information regarding this proposition. (See details in their advertisement.)

Mr. A. Eugene Michel.

Mr. A. Eugene Michel is now with the Geo. H. Gibson Company, advertising engineers, Park Row Building, New York, having resigned as assistant advertising manager of the Standard Paint Co. Mr. Michel is a graduate of Rose Polytechnic Institute, and his professional experience includes two years in the engineering department of the Diamond Chain Works of the Federal Manufacturing Co., charge of the testing department of the Ewart Manufacturing Co. and the assistant managership of the department of publicity of the International Steam Pump Co.

The Savannah Warehousing Co.

In sending out a card of Christmas greetings the Savannah (Ga.) Warehousing Co. calls attention to its warehouse facilities, comprising two large buildings equipped with every facility necessary for handling merchandise of any description. Many leading manufacturers of the North, the East and the South are availing themselves of the company's position as a general warehouse agent, shipping agent, wholesale distributor and lumber forwarder. The Savannah Warehousing Co. offers prompt service, cheap insurance, reasonable charges. It says "If it is connected with shipping, we do it."

Weber Chimneys for England.

The Weber steel-concrete chimney is to be actively exploited in England during 1906. Carl Weber, president of the Weber Steel Concrete Chimney Co., Chicago, has just returned from Europe, where he organized the Weber Steel Concrete Chimney Co., Ltd., with offices at Queen Anne's Chambers, Westminster, London, England. John Gargill, formerly with the British Westinghouse Co., later London manager for Milliken Bros., Inc., will be managing director of the European Weber Company. Mr. Weber also closed contract while in London with Abram Lyle & Sons of the city for a 25x20-foot chimney.

Southwestern Mercantile Agency.

The Southwestern Mercantile Agency, Ltd., maintains its offices in the Morris Building on Canal street. This institution has a creditable position in the commercial community here, and is a factor in the business interests of the Crescent City and the South and Southwest. It was established in December, 1904, and its record for the first year has been very creditable. A. L. Redden, president of the company, has the business thoroughly systematized, and with a large clerical force and many agents throughout the territory, his facilities for making collections are complete. The Southwestern Mercantile Agency is located in New Orleans, La.

Mr. F. E. Matthews.

Mr. F. E. Matthews has recently accepted the position of general manager of the Automatic Refrigerating Co., 22 Thames street, New York, taking up his new duties on January 1. He is a technical electrical engineer, but is better known in refrigerating engineering circles through his work in that line. For several years he was connected with Swift Packing Co., for which he had charge of refrigerating and other mechanical departments in Kansas City, Philadelphia, Boston and New York plants. For the past two years Mr. Matthews has been connected with the sales department of the De La Vergne Machine Co. in the capacity of advertising manager.

Complimenting a Product.

The Standard Wallpaper Co. of Sandyhill, N. Y., which claims to have the largest wallpaper plant in the world, has within the last two or three years had occasion to install considerable apparatus manufactured by the American Blower Co. of Detroit, Mich. It recently wrote the American Blower Co. as follows: "We have two of your 100-inch fans in operation in our Sandyhill plant which are used for drying purposes, one of which is operated with a motor and the other with one of your type A engines, and we are pleased to say that it is in all respects the most satisfactory equipment of the kind that we ever had anything to do with. The heater and the fan, with the engine just received, were put in complete operation in 36 hours after they were received. Everything seemed to fit perfectly."

Labor for Any Section.

One of the evidences of great progress in every avenue of industrial activity in the

South, as well as in other sections of the country, has been the scarcity of labor in many localities to enable employers to expand their enterprises to their utmost possibilities. In this connection it is well to note that agencies have been established which aim to meet the demand for labor and have systematized their efforts in this direction. S. S. Schwartz's Licensed Labor Agency may be mentioned as a prominent worker in the labor-supply field. Mr. Schwartz established his business in 1897, and is said to have been successful in his efforts. He contracts with employers and contractors who may need men for work in various fields of activity. Correspondence from those who may want to secure labor is solicited. Mr. Schwartz has his office at 113-115 1st street, New York.

Worth-Sherwood Shuttle Block Co.

Buyers of and dealers in shuttle blocks, bobbin heads and other similar supplies for textile mills should not lose sight of the fact that during the past year an independent shuttle-block and bobbin-head manufacturing enterprise was organized at Greensboro, N. C. The new company is buying dogwood and persimmon for shuttle blocks for domestic and export trade, and is operating two plants at Greensboro, besides which it has large contracts for export. It is stated that all of the hardwood used in this branch of textile supplies, with the exception of some African boxwood, is grown exclusively in the South, and therefore that section is an especially advantageous location for manufacturing plants of this character. The independent enterprise above referred to is the Worth-Sherwood Shuttle Block Co., under the management of Messrs. M. S. Sherwood and H. B. Worth, who have had long and successful experience in manufacturing supplies for the textile mills. They claim theirs is the only company that controls raw materials direct from the log to the loom. Mr. Sherwood is president and Mr. Worth is secretary. They are prepared to correspond with parties who have raw materials for sale.

"Durbon"—Natural Carbon Paint.

Great attention is given nowadays to the protection of wood and metal surfaces, both exposed and otherwise, by the use of protective coatings. Protective coatings are required for railway rolling stock, bridges, elevated railway structures, all kinds of structural metals, various products made from metals, metal piping, wood, etc. In meeting this demand a number of manufacturers are engaged, one of the leading enterprises being a Southern company. This is the Durbon Paint Manufacturing Co. of Nashville, Tenn., which offers "Durbon," for which a large demand has arisen because of its merits and for which there is a continually increasing demand as these merits become better known to users of protective paints. The Durbon Paint Manufacturing Co. states that "Durbon" is a natural carbon paint, not mechanically compounded or produced by any artificial process, but, so far as its composition is concerned, is exactly as nature locked it in its cabinet years ago, to be disclosed within the last three years to meet the need for it. "Durbon's" qualities have been tested by the most crucial tests of paint experts, and the company offers extremely liberal propositions to those who may want to investigate and discover just what "Durbon" will do.

The Chattanooga Paint Co.

In company with the unusual building and construction activity prevailing in the South, as well as in other parts of the United States, is the increasing demand for the materials needed. Among these may be mentioned metallic paints, mortar colors, manganese for brickmakers' use, and various other products of a similar character. Tin, iron or shingle roofs, railroad cars, bridges, barns, fences, outbuildings or any place where protection from the weather is desired call for special paints. In meeting the Southern demand Southern manufacturers are prominent. Among them is the Chattanooga Paint Co. of Chattanooga, Tenn., whose offerings are now being distributed in large quantities, and the demand for which, because of inherent meritable qualities, is steadily increasing. The Chattanooga Paint Co. is especially well known for its Eclipse Mortar Colors—red, brown, buff and black; Lowe's Standard Paint, and Red Oxide of Iron Paint, which is especially intended for protecting outside surfaces. This latter paint is also extensively used by some of the most extensive carriage and wagon manufacturers and paint grinders. Dealers and consumers who are interested in perfected products of the character referred to above are invited to correspond with the Chattanooga Paint Co. and investigate its manufactures before making contracts. A. E. Tucker is manager of the Chattanooga Paint Co.

Heat and Ventilation in London.

The London Power Omnibus Co. has 13 single-deck omnibuses now, and 75 double-deck omnibuses (from Messrs. Scott, Stirling & Co., Ltd.) will be delivered soon. It has erected on a 1½-acre site buildings which include a carhouse 90x250 feet, of wrought iron, in one span, in which 150 double-deck cars can be stored, and a repair shop 60x30 feet, with a wrought-iron single-span roof, containing six large repair pits. All the buildings will be heated by hot air and lighted by electricity. They have been designed by C. W. Stephens, and M. Carmichael of Waudsworth, who erected many large London public buildings, is carrying out the plans. An interesting phase of this extensive plant is the carhouse and repair-shop heating and ventilating system, built by the Buffalo Forge Co., 29 Victoria street, London, S. E. Each building is equipped with separate plant. The arrangement is such that the plant may be used for heating only when there is no necessity for ventilating, and when the motor-buses are in the carhouse the fumes of petrol are dispelled by rapidly circulating a large volume of fresh air. By simple arrangement of doors leading into the heating chamber, from within and outside the building, this ventilation is obtained. The plant is located at convenient points on platforms, the boiler (supplying steam at a pressure of 15 pounds) being placed underneath the largest. This boiler is a low-sectional type, with an unusually large heating and grate service. The water on condensation is returned by gravity, to be used over and over again. This prevents scaling and considerably increases economy and efficiency. The plant is so arranged that only a portion of the heating surface may be used, sufficient to meet the requirements of any particular outside temperature. Eighteen thousand cubic feet of fresh air is forced into the carshed every minute, corresponding to an air change of twice per hour. For the repair shop 5000 cubic feet of warm fresh air is supplied per minute. The plant consists essentially of a large, slow-running steel-plate fan, which draws air from outside or within as required, and forces this air over a battery of heating coils, where it is warmed up to the required degree and then distributed over the building by means of a system of air-distributing pipes. Electric motors are used for driving these fans on account of the small amount of attention which they require. This combined system of heating and ventilating was adopted by the London Power Omnibus Co. after investigation as being the most up to date and efficient for the purpose in view.

Damp Walls and Stone Decay.

All kinds of building material possess, in greater or less degree, the power to absorb moisture from the atmosphere, due principally to their porous character. The decay of stone, brick, cement, stucco, plaster, etc., arises from various causes, but it will be conceded that these causes are generally due to moisture. This decay has been given the attention of ingenious minds which designed a material to be used for protection against damp walls and stone decay. It is claimed that the substance waterproofs and preserves bricks, stone, cement, stucco, plaster, etc., and every description of building material, having stood the test of time and been extensively used for years. It is now being introduced in America with considerable success, its name being Szerelmei. It comes as Szerelmei stone liquid, Szerelmei iron paint, Szerelmei porcelain paint, Szerelmei varnishes, etc. Szerelmei products are described in detail and the history of their successful use for 50 years in Europe is presented in publications issued by the American representatives, Messrs. Hardesty & Hume, general agents, offices in the Home Life Building, Washington, D. C. People who are interested in products of this character and are not acquainted with Szerelmei should not fail to inform themselves regarding the services it performs. Write the general agency for particulars.

Mr. Columbus Bierce of William W. Bierce, Ltd., offices in Hennen Building, New Orleans, La., in speaking to a representative of the Manufacturers' Record, said: "Railroad enterprise in Texas, Mississippi, Alabama and Louisiana is now commencing in real earnest. It is only now that the world is beginning to realize what lies in the South awaiting development. The State of Louisiana alone is easily capable of feeding, clothing and housing 40,000,000 people—a veritable empire in itself. Our pine and cypress are matchless, our rice and sugar are known the world over for their merits, while cotton, the snow-white staple which has done so much for the South, can be extended in its area of cultivation manifold. Fuel oil, right at the door of New Orleans, cheap and inviting,

solves an important industrial problem. Where can one find a land more attractive to the farmer, mechanic or manufacturer?" Because of his connection with the Cambria Steel Works as sales agent, Mr. Bierce is familiar with the demand for structural steel and iron, great quantities of which are being called for in the South. Under the direction of Mr. Bierce the Cambria Steel Co.'s business in the territory tributary to Louisiana is extensive and constantly increasing in steel bridges, plain and ornamental structural iron and steel, spikes and bolts, brasswork and castings, rails, frogs, switches, spikes, etc. Mr. Bierce is also well known in connection with William W. Bierce, Ltd., as a builder of cotton compresses, and is now estimating on plants for Forrest City and McGhee, Ark. He has recently closed contracts for compresses at Durant and Weleetka, I. T. Each of these compresses is to have a capacity of 100 bales per hour.

Marine Steam Turbines.

A news item recently widely circulated apropos of the highly-successful performance of the Cunard steamer "Carmania" and its probable effect on the marine turbine business in the United States refers to a certain manufacturing company in such a way as to give the impression that it builds the Parsons marine turbine in this country. The author of the item was probably misled by the fact that the company referred to holds certain rights to the Parsons turbine for land purposes and has been building turbines of that general type. As a matter of fact, however, it has no rights under the Parsons marine patents, which broadly cover the type of marine turbine which has proven so successful on the "Carmania" and other mercantile vessels, and which has been adopted by the British Admiralty almost to the exclusion of the reciprocating engine. The rights to build Parsons marine turbines in the United States are held only by the Allis-Chalmers Company of Milwaukee, Chicago, Cincinnati and Scranton; Wm. Cramp & Sons, Philadelphia; W. A. Fletcher Company, Hoboken, N. J.; the Quintard Iron Works, New York, and the Bath Iron Works of Bath, Maine. The Allis-Chalmers Company is not only licensee under the Parsons marine turbine patents, but it also holds the rights for manufacturing the Parsons turbine blowers and compressors, and recently formed an alliance with the Hon. Charles A. Parsons, the eminent turbine inventor, for a full co-operation and interchange of data on steam turbines for land operations. The Allis-Chalmers Company is practically doubling its immense plant at West Allis, Milwaukee, Wis., the greater part of the new shops being intended for an extension of its steam turbine work and the electric generators to be driven by the same. At the West Allis works will be built marine steam turbines for the Great Lakes and for the Pacific coast, and both there and at the Scranton works marine turbines will be built for the Atlantic trade. The foregoing information is given by the Allis-Chalmers Company.

TRADE LITERATURE.

The Draper Company.

The Draper Company of Hopedale, Mass., is sending out a large colored poster giving a few recent illustrations of its improved textile-mill machinery, together with a photographic bird's-eye view of the large Draper manufacturing establishment. This is a cardboard hanger suitable for adorning the walls of modern textile mills.

New Westinghouse Literature.

The Westinghouse Pipe-Thawing Apparatus is described and illustrated in folder No. 4051, now being distributed. Westinghouse Automatic Circuit-Breakers' Carbon Break is detailed in circular No. 1107. These two latest publications of the Westinghouse Electric & Manufacturing Co. of Pittsburgh, Pa., will interest many readers. Copies on application.

From the Southern Saw Works.

A timely greeting from the Southern Saw Works comes in the form of a neat vest-pocket memorandum book containing the 1906 calendar and a brief reference to the company's products. This Southern company, which is located at Atlanta, Ga., manufactures saws of all kinds for the lumber industry and kindred interests, besides maintaining a large saw-repairing department.

For Heating and Ventilating.

Fans, blowers and exhausters for heating and ventilating, mechanical draft and other purposes are described in a booklet issued by the Green Fuel Economizer Co. of Matteawan, N. Y. The Green Fuel Economizer Co. does not contract for the engineering of plants, nor for the installation of heating

and ventilating plants in competition with the heating and ventilating contractors. It has recently added large shops to its plants at Mattewan to handle this branch of the business.

Usdurian Packing for Joints.

Usdurian (Turtle Brand) Sheet Packing is used for steam, hot water, engine and pump joints. Its success has been such that the product has an international reputation for efficiency. Leaky joints and other troubles which are met with in the operation of various kinds of machinery are claimed to be most favorably obviated by the use of the Usdurian packing. A leaflet regarding this specialty is now being sent out by the Revere Rubber Co., 815 Drexel Building, Philadelphia, Pa. That company manufactures Usdurian.

Cotton Chats for December.

A recent advertisement said: "The whole cotton manufacturing industry of this country is confronted by a scarce-help problem. Automatic looms have already released 10,000 operatives who have been absorbed by the general growth of the industry. Now is the time to renovate old mills." Some interesting facts regarding this situation are contained in the December number of Cotton Chats, published by the Draper Company of Hopkinton, Mass. This is the company which manufactures the automatic looms (the Northrop) referred to in the advertisement above quoted.

Practical Farm Buildings.

An interesting publication of value to people who are concerned in agricultural pursuits, and therefore desire to keep posted on the best kind of farm buildings, is the pamphlet entitled "Practical Farm Buildings." This pamphlet contains plans and suggestions for various classes of structures needed on farms, such as poultry-houses, barns, stables, dairy barns, etc. Accompanying these plans are suggestions relative to the economy of a good roof and advice as to the special brand of roofing, siding, paints and other materials which should be used. Diagrams and photographic illustrations are also presented to elucidate the text. "Practical Farm Buildings—Plans and Suggestions," by A. F. Hunter, is published by Messrs. F. W. Bird & Son, the well-known roofing and siding material manufacturers, East Walpole, Mass. The firm will send a copy of the pamphlet to any inquirer.

A Vacation This Winter.

During recent years a winter vacation has come to be considered by many business men as desirable, if not really necessary. Winter vacations are made healthful and exhilarating by an outing in snow-mantled New England or Canada. Those who are in a position to avail themselves of the possibilities of a winter vacation should not fail to read the Boston & Maine Messenger if they contemplate a vacation this winter. People who shiver in the bitter winds near the seashore, where the air is distressingly damp, will find that winter is a different proposition up among the foothills and mountains of New Hampshire, Vermont, and in the surrounding territory and further North. There the temperature may drop to zero, yet the dryness of the air, the purity of the scene and the surpassing beauty of the winter scenery makes life thoroughly enjoyable. The Passenger Department, Boston & Maine Railroad, Boston, Mass., will send a copy of the Boston & Maine Messenger to you.

Drew Boilers and Engines.

Power users who need to purchase boilers and engines will find their interests well served if they will consult the Drew Machinery Agency before signing contracts for power machinery. This company is issuing an illustrated pamphlet which presents full details regarding the Drew special boilers and center-entrance engines, the designs of which have been proved to be entirely satisfactory by many years' usage in numerous industrial plants throughout the country. Both boilers and engines of the Drew specifications are built of the best materials for the purpose and by skilled workmen experienced in this branch of mechanics. Besides building these machines, the Drew Machinery Agency has other new and second-hand machinery for manufacturing and power uses which prospective purchasers will find it to their advantage to be acquainted with before ordering their equipments. The Drew Machinery Agency is located at Manchester, N. H., and is prepared to ship to any point.

For Electric-Plant Managers.

Managers of electric plants who desire to keep informed regarding progress in machinery and appliances needed in their establishments will find it worth while to read The

Live Wire. This is a little monthly journal which is published to present ideas of which managers may avail themselves to the betterment of their enterprises. In the December number of The Live Wire appears an editorial entitled "A Good Idea." The gist of this is that endeavors are being made to secure the operation of electric-lighting plants generally in making it an established custom to print upon their letter-heads the essential data concerning the equipment of their plants. It is believed that this will be of great value to supply-houses in filling orders, but of greater value to the central station men. The data would comprise answers to the following: Is the system direct or alternating current? What voltage (giving both primary and secondary if alternating), phase and cycles? Is there a day circuit? What incandescent lamp is used? Managers who are interested in this subject are asked to write The Live Wire Publishing Co., St. Louis, Mo., for a copy of The Live Wire.

Underground Wire-Rope Haulage.

Modern uses for coal have given rise to a constantly increasing demand on the mining interests for greater output. The leisurely methods of comparatively recent years are being relegated to the background, though they are surprisingly prevalent even today, to the great detriment of operators. The first requisite in meeting the demand is, necessarily, extended underground work. Subsequent operations—screening and shipping—must be performed at central positions. The consequent need is for methods of collection from the workings and rapid delivery to the central point. A system of haulage is in demand by means of which the conditions peculiar to this class of work may be satisfactorily met. It must be simple, inexpensive and easily handled, both in installation and maintenance, and absolutely reliable in action under all conditions. Probably no method of underground haulage in use today appears to meet a greater number of these requirements than the use of wire rope, and its extensive application is a sufficient guarantee of its general adaptability. There is now being distributed a publication which aims to illustrate by example the general method of applying wire rope to this important branch of mining work and to give some idea of its advantages. It is entitled "Underground Wire-Rope Haulage," as successfully applied in the workings of the Coal Valley Mining Co. at Sherrard and Cable, Ill. Its paper, typographical work and contents are all of an exceptionally high-grade character. The publication was written and illustrated by Wm. E. Rolfe for the Broderick & Bascom Rope Co., manufacturer of wire rope, St. Louis; office and warehouse at 19 Murray street, New York. Send for a copy.

Walschaert Valve Gear.

The above is the title of a special pamphlet devoted to the application of Walschaert valve gear to large American locomotives, soon to be issued by the American Locomotive Co. of New York. Its appearance being timely in view of the interest in this valve gear in connection with conditions in locomotive construction which render this gear desirable for very heavy locomotives. The pamphlet opens with brief statements of the advantages of this gear as applied to recently arisen conditions which make it difficult to properly maintain Stephenson valve gear on a very large modern locomotive. Among these the accessibility of Walschaert gear is prominent. It is made clear that while this is an old valve gear, its application now to American locomotives is due to their very great increase in size and power. Incidentally the Walschaert gear effects a saving in weight and provides directness of motion, keeping stresses in nearly straight lines. It provides permanence of adjustment, reduces wear, facilitates smooth operation and permits of properly bracing the frames of the locomotive. The pamphlet illustrates six large modern locomotives equipped with this gear, including the heaviest passenger, freight and switching locomotives ever built. Line engravings illustrate side elevations and cross sections of a number of designs showing arrangement of the gear. Diagrams explain the application of the motion and a table shows relative weights of Stephenson and Walschaert gear for three locomotives. Service results are included, and the pamphlet also presents a general description, directions for adjusting valves and method of laying out Walschaert gear, which was specially prepared by C. J. Mellin for this pamphlet. The publication presents actual practice and theoretical considerations which are sufficient to form the basis of a general understanding of the gear and a technical description to enable an intelligent draftsman to apply it in his practice.

FINANCIAL NEWS

The MANUFACTURERS' RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Review of the Baltimore Market.

Office MANUFACTURERS' RECORD,

Baltimore, Md., January 3.

Business in the Baltimore stock market during the past week was moderate in volume and the trading was not at any time more than fairly active. United Railways common sold at 14 3/4; the income bonds from 65 3/4 to 66 3/4; the income trust certificates from 64 1/2 to 65, and the 4s at 93 to 93 1/4. United Light & Power 4 1/2s were traded in at 97 1/4, and Consolidated Gas at 83 1/2; do. 4 1/2s at 100 1/4 to 100. The trading in Seaboard consisted of sales of the old common at 35 1/4 to 35; the new common from 30 to 31 1/4; the new second preferred from 60 1/2 to 63 1/4; the 4s from 89 1/2 to 90; the 10-year 5s at 103, and the 3-year 5s at 100 1/2. Cotton Duck 5s sold at 84; Consolidated Cotton Duck preferred at 35; G. B. S. incomes from 31 to 31 1/4, and the 1sts from 61 to 61 1/2.

Commercial and Farmers' Bank stock, blue certificates, sold at 142, and Western Bank at 39.

Maryland Trust preferred sold from 125 to 130; Mercantile Trust from 144 to 145, and Continental Trust at 197 1/2 to 200.

Other securities were traded in as follows: Atlantic Coast Line Consolidated 4s, 101 7/8; do. new 4s, certificates, 94 to 93 7/8; do. Connecticut 4s, certificates, 92 1/2; Georgia & Alabama Consolidated 5s, 113 1/4, and ex-coupon at 111 to 111 1/4; Maryland & Pennsylvania incomes, 65 1/4; Western Maryland stock, 14 to 16 1/4; do. 4s, 86 1/2; Northern Central Railway stock, 106 to 104 1/2; Baltimore, Sparrows Point & Chesapeake 4 1/2s, 98 1/4 to 98 1/2; Carolina Central 4s, 90 1/2 to 97 1/2; Baltimore City 3 1/4s, 1927, 96; Alabama Consolidated Coal & Iron preferred, 96; do. 5s, 92 1/2; Houston Oil, 7 1/2 to 8 1/4; Anacostia & Potomac 5s, 105 1/2; Charleston Consolidated Electric 5s, 96 1/4 to 97 1/4; Suffolk & Carolina 1st Consolidated 5s, 97 1/2; Virginia Midland 5ths, 113 3/4; Norfolk Railway & Light stock, 13 1/2 to 13 3/4; Augusta & Aiken 5s, 90; Virginia Electric Railway & Development 5s, 102, and ex-coupon 90 1/2; American Ice 6s, 87; Coal & Iron 5s, 107; Georgia Southern & Florida 5s, 114; Norfolk & Carolina 1st 5s, 117; Norfolk Railway & Light 5s, 96; Atlanta Gas-light 5s, 101 1/4; Georgia, Carolina & Northern 5s, 110 1/2.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended January 3, 1906.

Railroad Stocks.	Par.	Bid.	Asked.
Atlantic Coast Line.....	100	159	...
Atlantic Coast Line of Conn.....	100	...	437 1/2
Georgia Sou. & Fla. 1st Pref.....	100	...	98 1/4
Georgia Sou. & Fla. 2d Pref.....	100	...	72
Maryland & Pennsylvania.....	100	22 1/2	27 1/2
Norfolk Railway & Light.....	25	13 1/2	13 3/4
Seaboard Railway Common.....	100	...	35 1/2
Seaboard Railway Preferred.....	100	54	56
United Railways & Elec. Co.....	50	11 1/2	15 1/2
Bank Stocks.			
Citizens' National Bank.....	10	28 1/2	29
Commercial & Far. Nat. Bank.....	100	130	140
Com. & Far. Nat. Bk. Blue Cts.....	100	142	160
German Bank.....	100	107 1/2	...
Maryland National Bank.....	100	185	185
National Bank of Baltimore.....	100	116 1/4	122 1/4
National Bank of Commerce.....	15	25	...
National Exchange Bank.....	100	...	185
National Marine Bank.....	30	37	40
National Mechanics' Bank.....	10	35	...
Western National Bank.....	20	39	41
Trust, Fidelity and Casualty Stocks.			
Continental Trust.....	100	197 1/2	210
Fidelity & Deposit.....	50	...	148 1/2
Fidelity Trust.....	100	200	215
International Trust.....	100	146 1/2	147 1/2
Maryland Casualty.....	25	...	57
Maryland Trust Preferred.....	100	128	130
Mercantile Trust & Deposit.....	50	...	145
U. S. Fidelity & Guaranty.....	100	...	139 1/2
Miscellaneous Stocks.			
Alabama Con. Coal & Iron.....	100	60	72
Ala. Con. Coal & Iron Pref.....	100	...	96
Consolidated Gas.....	100	...	85 1/2
Consolidated Coal.....	100	...	100
G. B. & S. Brewing Co.....	100	8	9

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